

14. VIRGIN ISLANDS

(1) This chapter describes the United States **Virgin Islands**, which include the islands of St. Thomas, St. John, and St. Croix, and about 40 small islets or cays. Information is given on the ports and harbors of the islands including Charlotte Amalie, Christiansted, Krause Lagoon, Cruz Bay, and Frederiksted. A general description of the British Virgin Islands is also included; more complete information is given in Pub. No. 147, *Sailing Directions* (Enroute), Caribbean Sea, Vol. I, published by the United States National Imagery and Mapping Agency, and *West Indies Pilot*, Volume II, published by the United Kingdom Ministry of Defense Hydrographic Department.

(2) **Note.**—In this chapter a chart number marked by an asterisk indicates that the chart is published by National Imagery and Mapping Agency.

(3) The **United States Virgin Islands**, separated from the easternmost island of the Puerto Rico group by 8-mile-wide Virgin Passage, were purchased from Denmark in 1917, and United States citizenship conferred upon the islanders in 1927. Under the revised Organic Act of 1954, legislative powers are vested in a Senate, whose members are elected by the islanders for 2-year terms. The Governor, who has certain veto powers, is elected by the people of the U.S. Virgin Islands. The capital is Charlotte Amalie, on the island of St. Thomas.

(4) The **British Virgin Islands** are N and E of the United States group. The United States-Great Britain boundary extends SE between Hans Lolloik and Little Tobago Islands, thence through the narrows between St. John and Tortola Islands, and thence S through Flanagan Passage between Flanagan and Norman Islands.

(5) **Prominent features.**—Making the Virgin Islands from the N, Virgin Gorda (British) will be seen on the extreme left, rising in a clear, well-defined peak about 1,400 feet high. Next to Virgin Gorda, Tortola (also British) will appear most conspicuous; the highest mountain appears flattened and elongated from N but rises to an elevation of about 1,800 feet. Immediately W of Tortola will be seen the rugged, pointed peaks of Jost Van Dyke (British), rising to about 1,100 feet, and behind them the irregular small peaks rising from the tableland of St. John (U.S.) to heights of 800 to 1,300 feet.

(6) From about 20 miles N of the islands, a separation will be observed between St. Thomas and St. John, but St. John, Jost Van Dyke, Tortola, and Virgin Gorda will appear to be one large island. St. Thomas is less rugged in outline than the other islands, but it may be recognized from its large midisland saddle which has horns nearly 1,600 feet high; the saddle is equally conspicuous from the S.

(7) **COLREGS Demarcation Lines.**—The lines established for the Virgin Islands are described in **80.738**, chapter 2.

(8) **Vessel Traffic Management.**—(See **Part 161, Subpart A**, chapter 2, for regulations requiring notifications of arrivals, departures, hazardous conditions, and certain dangerous cargoes to the Captain of the Port.)

(9) **Routes.**—From Charlotte Amalie to the Straits of Florida, proceed through Virgin Passage and thence as direct as safe navigation permits along the N coasts of Puerto Rico and Hispaniola, and then along the N coast of Cuba through Old Bahama and Nicholas Channels to destination. The distance is 1,086 miles.

(10) Bound to Baltimore, New York, or Boston, pass W of Sail Rock and, when clear of Virgin Passage, take a great circle course

direct to destination. Distances from Charlotte Amalie are 1,418 miles to Baltimore, 1,435 miles to New York, and 1,517 miles to Boston.

(11) **Tides.**—The range of tides around the Virgin Islands is only about 1 foot. Along the coasts bordering the Atlantic Ocean the tide is chiefly semidiurnal, and along the Caribbean shores it is mostly diurnal.

(12) **Currents.**—The currents among the Virgin Islands, although of considerable importance to navigators, are not well established by observation. The tidal current is said to set SE and NW. In the general vicinity of the islands there is an oceanic current with a velocity of about 0.2 knot that sets in a direction varying from NW to W.

(13) **Weather.**—The following description of weather conditions in the Virgin Islands was prepared by the Office of Climatology, Environmental Data and Information Service. (See page T-14 for **St. Croix climatological table**.)

(14) **Wind.**—One of the outstanding features of the climate in the Virgin Islands is the steadiness of the trade winds. They blow almost without exception from an E direction, or between NNE and SSE. The highest mean maximum wind speeds usually occur in July. Superimposed on the trade winds are the land and sea breezes, which are important in most coastal areas. Night winds are lighter than the daytime winds. About daybreak the wind speed begins to pick up, reaching a maximum late in the morning or early afternoon. A return to the lighter nighttime winds begins during the late afternoon, usually about 1600. It must be remembered that these islands are located in the path of occasional tropical storms or hurricanes and extremely high winds may be experienced during such passages. Thirteen tropical systems have passed within 50 miles of Charlotte Amalie since 1950 including Georges in 1998, Marilyn in 1995, Hugo in 1989, and Donna in 1960. Both Hugo and Donna provided winds in excess of 130 knots. (See chapter 3 for information about hurricanes.)

(15) **Precipitation.**—The time of maximum rainfall expectancy is roughly from May through November or December, with showers providing most of the rain. The heavier rains have usually been associated with tropical cyclones and hurricanes that are most likely to reach the area during the months of August, September, and October; or with frontal systems or E waves which may reach the area in these or other months. The average annual rainfall at Charlotte Amalie is 41 inches with a maximum rainfall during September and a minimum in February. The average annual temperature at Charlotte Amalie is 80.4°F with an average maximum of 85.7°F and an average minimum of 74.7°F. Each month, April through November, has recorded maximum temperatures in excess of 90°F with the all-time maximum, 92°F, occurring in six separate months: May, and July through November, of various years. The extreme minimum temperature recorded at Charlotte Amalie is 63°F recorded in January 1956.

(16) **Pilotage, U.S. Virgin Islands.**—Vessels of and above 100 gross registered tons and those vessels carrying explosives and dangerous cargo must engage for the services of an Insular Government pilot in order to enter, leave, or shift berths in a U.S. Virgin Islands port. Vessels of less tonnage, and vessels of the United States or foreign governments and pleasure craft are exempt from pilotage unless a pilot is actually employed. Exempted vessels when requiring the services of a pilot will be charged the regular rate. Pilots will take all classes of vessels in or out, day or

night, unless otherwise noted. Arrangements for pilots are generally made 24 hours prior to the ship's arrival by the ship's agents.

(17) **Quarantine.**—National quarantine laws are enforced in the U.S. Virgin Islands by officers of the U.S. Public Health Service. All vessels from foreign ports, vessels with sickness on board, and vessels from domestic ports where certain quarantinable diseases prevail are subject to inspection. (See Public Health Service, chapter 1.)

(18) **Customs.**—The customs collection district of the U.S. Virgin Islands is under the jurisdiction of the U.S. Treasury Department but has its own customs laws. Imports manufactured in the United States enter free of duty. All foreign goods coming into the islands are subject to an import duty of 6 percent, ad valorem, unless specified as free of duty, even if imported from continental United States.

(19) **Agricultural quarantine** laws are enforced by officials at Charlotte Amalie and Christiansted.

(20) **Immigration.**—The United States immigration laws apply in the U.S. Virgin Islands. Passports and visas are required by persons other than U.S. citizens.

(21) **Wharves.**—Deep-draft facilities are at Charlotte Amalie, St. Thomas Island, and on St. Croix Island at Frederiksted, and at the private facilities at Krause Lagoon and in Limetree Bay. Vessels drawing up to 16 feet can go alongside Gallows Bay Dock at Christiansted, St. Croix Island. At other places only small craft go alongside the wharves.

(22) **Supplies.**—Bunker fuels, diesel oil, and gasoline are available only at Krause Lagoon on an emergency basis. Diesel fuel, water, and marine supplies are available at Charlotte Amalie. Limited marine supplies can be obtained at Christiansted and Frederiksted. Gasoline, diesel fuel, and marine supplies for small craft are available at the marinas around the islands.

(23) **Repairs.**—There are no facilities at any of the ports for major repairs to deep-draft vessels. Machine shops at Charlotte Amalie, Christiansted, and Frederiksted can make minor above-the-waterline repairs.

(24) **Communications.**—The islands of St. Thomas, St. John, and St. Croix have good highways. Regular air service is maintained between St. Thomas Island, St. Croix Island, San Juan, United States, and some foreign ports. Steamship lines call at Charlotte Amalie and Frederiksted. Small interisland vessels operate from United States Virgin Island ports to the British Virgin Islands, Puerto Rico, and other West Indies ports.

(25) Telephone, radio, and cable service facilities are available on the islands of St. Thomas, St. John, and St. Croix.

(26) **Currency.** The monetary unit is the U.S. dollar.

(27) **Standard time.**—The U.S. Virgin Islands use Atlantic standard time, which is 4 hours slow of Greenwich mean time. The U.S. Virgin Islands do not observe daylight saving time.

(28) **Chart 25640.**—Most of the Virgin Islands are situated on the S side of **Virgin Bank** which extends in an E and ENE direction for 86 miles from the E end of Puerto Rico. For about 50 miles the bank trends E, averaging 25 miles in width, and then swings slightly ENE, increasing in width to 32 miles. It terminates close beyond the SE extremity of Anegada Island in a point several miles wide.

(29) The bank is an ocean shelf, with abrupt drops in depths near its edges. On the N side of the island group, W of 64°40'W. and within half a mile of the islands, the general depths range from 18 to 40 fathoms except for the outlying banks. E of this

line, the depths gradually decrease until soundings of 6 fathoms are found about 0.8 mile off the W end of Anegada Island. On the S side of the island group, the depths differ considerably from those on the N side. The S side is bold and wall sided, and lies from 1 to 7 miles off the islands; general depths of 8 to 33 fathoms are found in this area. Close within the outer edge of the bank is a narrow ledge of coral that extends almost unbroken from Horse Shoe Reef, at Anegada Island, to Isla de Vieques. This ledge, about 200 yards wide, has depths of 11 to 19 fathoms.

(30) **Whale Banks**, about 13 miles N of Tortola Island and 15 miles W of Anegada Island, are two patches with depths of 12 to 20 fathoms on the N bank and a least depth of 10 fathoms on the S bank. **Turtle Head**, a coral reef covered 6 fathoms, is about 10 miles N of Jost Van Dyke Island and 13 miles NW of Tortola Island. **Barracouta Banks** about 8 miles NW of Jost Van Dyke, consist of several patches covered by 11 to 20 fathoms. **Kingfish Banks**, about 5 miles NNE of Jost Van Dyke Island, are two coral patches with 8 fathoms over them.

(31) **Chart 25650.—Virgin Passage** is 8 miles wide between Savana Island and Isla Culebrita, with depths of from 11 to 17 fathoms in the S part and up to 27 fathoms in the N part. It is clear except for Bajos Grampus on the SW side and Sail Rock on the SE side.

(32) **Tidal currents.**—In the middle of the passage the current velocity is about 0.5 knot and sets S and N. On the E side of the passage near Savana Island the velocity increases to about 2 knots.

(33) **Charts 25641, 25650.—Sail Rock**, on the E side of Virgin Passage about 7.6 miles ESE of Isla Culebrita, is so called from its resemblance to a vessel under sail. It rises precipitously from the sea to a height of 125 feet. It is about 100 yards in diameter, quite barren, and light gray in color. It is steep-to on all sides, but a rock awash is about 200 yards W of the islet. A lighted buoy is about 0.5 mile W of the islet.

(34) **St. Thomas Island**, commercially the most important of the U.S. Virgin Islands, is 34 miles E of Puerto Rico. It is 12 miles long and from 1 to 3 miles wide. A lofty ridge extends along its whole length. **Signal Hill**, nearly in the center of the island, is 1,504 feet high, and **Crown Mountain**, 1.7 miles to the W, is 1,550 feet high. Lights are shown from towers on the summit of each.

(35) The W half of St. Thomas presents the appearance of a steep ridge sloping precipitously to the N and the S, with numerous ravines widening at their lower ends into small tracts of level land on the seacoast. Between these level tracts the coast is usually bold with rocky promontories of considerable height. The higher hills are flat-topped and plateaulike, whereas the lower ones are for the most part dome shaped. The country is almost entirely wooded; the region W of Perseverance Bay presents a forestlike appearance of a thick growth of trees, shrubs, and vines.

(36) The E end of St. Thomas has the appearance of two main ridges, separated by a large basin and sloping to the N and S with numerous smaller ridges and spurs making off from them. St. Thomas is almost surrounded by small islands and cays, in general, bold and steep-to, with very few hidden dangers to guard against.

(37) **Savana Island**, 2 miles WSW from the W end of St. Thomas, is nearly a mile long and 0.5 mile wide. **Savana Island**

Light (18°20'22"N., 65°05'00"W.), 300 feet above the water, is shown from a white tower at the SW end of the island. The island is covered with a dense growth of vines, small trees, and underbrush. The entire NW shore is bold and precipitous with rock cliffs rising abruptly from the water's edge to as much as 120 feet. **Din Point** is a bold dark headland, with cliffs 80 to 100 feet high, at the NW extremity of the island. The SE shore of the island is generally rocky with short stretches of gravel beach in the bights. Depths of 34 feet and less extend up to 0.5 mile from the E side of the island. Just N of **Virgin Point**, the SW extremity of the island, the cliffs are of crushed rock and sandstone formation and from offshore appear as red cliffs. Detached rocks extend 200 yards S of Virgin Point. **Domkirk Rock**, a crag with twin steeple-shaped pinnacles which resemble a cathedral, is 100 yards SE of Virgin Point. Some rocks 8 to 10 feet high and steep-to are on a sunken ledge which extends about 700 yards off the NE point.

(38) The currents in the vicinity of the NE point of Savana Island are very strong, and small boats should give the reef a wide berth. Boat landings may be made in smooth weather.

(39) **Kalkun Cay**, in the middle of **Savana Passage**, is a narrow islet, 275 yards long and about 20 to 30 yards wide, which is covered with grass and small underbrush. About 0.5 mile SE of the cay is **Saltwater Money Rock**, 8 feet high, steep-to, with a clear channel between.

(40) **Little St. Thomas** is a low grass-covered peninsula connected with the W end of the island of St. Thomas by a sandspit. A 50-foot hill is near the NE point and a 21-foot bluff is at the S end. **Mermaids Chair**, 15 feet high, is a conspicuous rock that has the shape of a chair at the apex of a triangular coral reef projecting from the SW point of Little St. Thomas. Small boats stay in the small gravel cove S of the peninsula when the sea is too rough to land at Sandy Bay or Botany Bay. A boat passage is between Little St. Thomas and a 42-foot islet 100 yards to the N.

(41) **Big Current Hole** is a passage separating West Cay from Little St. Thomas. There are rocks awash extending E from West Cay; the outer one, **Drum Rock**, 2 feet high, constricts the channel, the strong currents and heavy tide rips render the passage difficult. Small boats using this passage, when passing through from S, head for Drum Rock and leave it close-to on the port hand.

(42) **West Cay**, 0.2 mile NW of Little St. Thomas, consists of 2 hills, 121 and 114 feet high, connected by a neck of low land. The small stretch on the E side of the cay is gravel. Landing may be made in the bight on the S side.

(43) **Salt Cay**, 242 feet high and 0.6 mile NW of Little St. Thomas, is generally rocky and rugged, particularly on the N coast where cliffs rise precipitously to 100 and 150 feet high. Many rocks awash are close-to on the SW, W, and E sides of the cay. The channel between Salt Cay and West Cay is shallow, and breakers extend across it.

(44) **Salt Cay Passage** is about a mile wide, with deep water in the channel, and is free of dangers.

(45) **Dutchcap Cay**, a mile NW of Salt Cay, rises abruptly from the sea to 278 feet high, with cliffs 100 feet high on the N shore.

(46) **Cockroach Island**, 3.3 miles NNW from the west end of St. Thomas Island, is 151 feet high and of irregular shape. The south shore is bold and precipitous with white rocky cliffs rising abruptly from the water's edge to a height of 120 feet. The N shore is rocky with cliffs back from the shore rising to a height of 80 feet, and indented by numerous small bights and crevices.

Cricket Rock, 0.5 mile ENE from Cockroach Island, is 46 feet high, bold, and steep-to, with sharp pinnacle rocks on top.

(47) **Dutchcap Passage**, just S of these islands, is free of dangers.

(48) **Currents**.—In navigating the passages between this group of islands, it is necessary to guard against the tidal currents, which in Savana Passage run with a velocity of 3 knots and in the others about 1 knot. Sailing vessels beating up against the northgoing current should stand well to S of Savana Island, so as to avoid the strength of the inshore current.

(49) The **N coast** of St. Thomas Island is very irregular with rocky cliffs and sandy beaches in the shallow bays. Much of the beach is fringed with coral reef making landing difficult in most places. The bays in the E half of the island are open to the prevailing E trade winds. Islands, rocks, and shoals are as much as 3 miles from the shore.

(50) **Sandy Bay** and **Botany Bay** are shallow bights separated by a rocky point at the W end of St. Thomas Island. Small-boat landings can be made during calm weather.

(51) **Santa Maria Bay**, 2.5 miles E of Botany Bay, has depths of 20 feet or more and is a fair shelter, but it is seldom used because of rollers.

(52) **Inner Brass Island** and **Outer Brass Island** are off the N side of St. Thomas about 4 miles from the W end. A 22-foot channel is between St. Thomas and Inner Brass Island; **Brass Channel**, between the two small islands, has a depth of 48 feet.

(53) Inner Brass Island has a generally rocky shore, with reefs extending as much as 300 yards off the E side. There are detached rocks and rocks awash within that area. NW of the S tip is a fine sand beach with a fringing coral reef. The reef has several breaks through which small-boat landings can be made. A well-sheltered anchorage for local boats is off the SW side of the island.

(54) The E shore of Outer Brass Island is bold and precipitous with rocky cliffs rising vertically from the water. The W shore is rocky and slopes up uniformly. **Cave Cove**, in about the middle of the W shore, has a large cave opening into it. **Rough Point**, the N extremity of the island, is sharp and jagged, and, on calm days, landings can be made on its W side. A 15-foot spot is about 330 yards W of Rough Point.

(55) Landings may be made on St. Thomas Island through breaks in the fringing coral reef in **Caret Bay** and **Neltjeberg Bay** SW and S of Inner Brass Island. **Hull Bay**, SE of Inner Brass Island, is shoal, but it is used to some extent by fishermen.

(56) **Lizard Rocks**, 0.7 mile offshore and 0.8 mile W of Inner Brass Island, are a group of bare rocks and rocks awash. **Ornen Rock**, with 6 feet over it, is a mile E of Inner Brass Island. Waves do not ordinarily break over Ornen Rock even during a heavy ground swell.

(57) **Magens Bay** is the only important bight on the N shore of St. Thomas. It is 1.6 miles long and 0.6 mile wide. Its E side is formed by a long, narrow tongue of land, which terminates to the NW at **Picara Point**, nearly midway between Hans Lollik and the Brass Islands, and its W side by St. Thomas Island and **Tropaco Point**. Prominent are several gray square buildings built over a 50-foot cliff at the end of Tropaco Point. The bay, safe only for small vessels, is open to the NW and consequently exposed to rollers. Entering from the N or NW, avoid Ornen Rock and from the E, during calm seas, the rocks 30 yards NE of Picara Point. During heavy ground swells, a confused sea exists in the area of these rocks, and the point should be given a wide berth.

(58) The depth in Magens Bay varies from 5 to 12 fathoms, but the S portion has a bank of 1¼ fathoms, extending 0.3 mile from the shore, surrounded by depths of 2 to 3 fathoms. A fine sand beach is at the head of the bay. **Reseau Bay** and **Lerkenlund Bay**, small bights on the W shore of Magens Bay, are used by fishermen to beach their boats.

(59) **Hans Lollik Island**, 713 feet high, 1.3 miles long, and about 0.8 mile wide, is 1.8 miles NE of Picara Point. The W side of the island is precipitous and rocky, except in a bay on the W side which has a gravel beach. **Coconut Bay**, on the SE face, is protected by off-lying **White Horseface Reef**. This bay is a protected anchorage for small boats and may be entered through a channel SW of the reef. **Hansa Rock**, close inshore at the S point, is 19 feet high and S of a small bay that is accessible to small boats in calm seas. **Hans Lollik Rock**, awash and on which the sea always breaks, is over 0.3 mile ESE of the S point of Hans Lollik Island.

(60) **Little Hans Lollik Island** is 0.2 mile N of Hans Lollik Island and connected with it by a coral ledge over which the sea breaks. There is an opening in the reef. The shoreline consists mostly of rocky cliffs from 20 to 60 feet high. **Steep Rock**, the only detached rock on the E shore of the island, is 25 feet high.

(61) **Pelican Cay**, 200 yards N of Little Hans Lollik Island, is a 20-foot grassy islet accessible in calm seas. Between the two are several rocks awash, and a reef over which the sea breaks is close NE of Little Hans Lollik Island. Except for these dangers, the channels on either side of the Hans Lollik group are clear.

(62) **Chart 25647.—Mandal Bay**, 3 miles E of Picara Point, is shoal, with a sandy beach at its head. **Mandal Point**, just E of the bay, is 277 feet high, with cliffs 100 to 120 feet high at the water's edge. An unmarked channel, W of the point, leads through the reefs and a landcut to a small dredged harbor. On the E side of the bay, a rubble mound breakwater extends 270 feet from shore on the N side of the channel entrance, and a smaller rubble mound jetty extends 70 feet from shore on the S side. A depth of about 10 feet was reported in the channel in 1972.

(63) Water generally breaks on a reef close NE of Mandal Point. A 23-foot spot is 0.3 mile E of the point.

(64) **Coki Point**, 1.9 miles ESE of Mandal Point, is 47 feet high and foul with coral on the N and E sides. It forms the N shore of **Water Bay**. A conspicuous 235-foot cone-shaped hill is just S of Water Bay. **Turtleback Rock**, 2 feet high, is off the entrance to Water Bay 0.3 mile SE of Coki Point. **Cabes Point** is a low rocky hook 1 mile SE of Coki Point. **Shark Island**, 32 feet high, is about 0.3 mile ESE of Cabes Point. Foul ground encircles the island with several visible rocks 125 yards off the NE end.

(65) **Redhook Bay**, at the E end of St. Thomas Island, consists of a S arm called **Muller Bay** and the W arm, **Vessup Bay**. Ferry boats to St. John Island use a small L-shaped pier in the NE part of Vessup Bay. In 1972, a depth of 9 feet was reported at its face. The channel through Redhook Bay into Vessup Bay is marked by private buoys. A marina is 200 yards W of the L-shaped pier. Berths, gasoline, electricity, water, ice, and marine supplies are available. Repairs can be made to gasoline or diesel engines and to some electronic equipment. The National Park Service maintains a L-shaped pier on the S side of Vessup Bay; in 1972, depths of about 6 feet were reported alongside.

(66) **Cabrita Point**, the E end of St. Thomas, rises to a height of 210 feet. A neck of land joins the remainder of St. Thomas. A 24-foot spot lies 0.6 mile ESE of Cabrita Point.

(67) **Pillsbury Sound** is the body of water between St. Thomas, St. John, and the cays which bound the sound on the N side, forming an excellent roadstead about 2 miles in extent E and W and 1.5 miles N and S. This area is quite secure against rollers and all winds except from the S which blow only in the hurricane months, but the area can become quite rough. The current attains a velocity of 2 knots.

(68) The depths in the sound are somewhat irregular, varying from 41 to 111 feet. All the main passages leading to it are deeper than the mean depth of the sound itself.

(69) **Thatch Cay**, at the NW end of Pillsbury Sound, is 1.6 miles long. The island is in the form of a ridge, 482 feet high near the E end.

(70) **Bull Point** and **Mother East Point** are prominent projecting points on the N side. **Lee Point** is the W point and **Grouper Point** the E point of the island. **Grass Cay**, 0.5 mile E of Thatch Cay, is 0.8 mile long. The N shore consists of rocky cliffs in places 150 feet high. A narrow rocky ledge, covered 12 feet at its E end, is close to shore near the W end, and a rock awash is 150 yards W of the same point.

(71) **Mingo Cay**, E of Grass Cay, is 186 feet high. Between Mingo and Grass Cays is a narrow shoal passage with a bare rock 15 feet high close to the middle. Several bare rocks are E of this rock. **Lovango Cay** is E of Mingo Cay and separated from it by a shoal passage 300 yards wide; the tidal current is strong in the 13-foot boat channel. Several houses and two private piers are in the bight along the S shore between **Murder Rock** and the SW point. **Blunder Rocks**, 250 yards E of Lovango Cay, are 4 feet high. **Congo Cay**, a narrow pointed cay N of Lovango Cay, is separated from it by a channel with depths of 13 feet. **Carval Rock** is 0.3 mile E of Congo Cay. There are several smaller rocks between it and the cay.

(72) **Two Brothers** are two small 12-foot-high barren rocks lying in the middle of Pillsbury Sound; a light 23 feet above the water is shown from the larger rock. A ledge extends off their NE side, deepening to 30 feet at a distance of 250 yards. Vessels can anchor in depths of 40 to 65 feet about 0.5 mile NE of Two Brothers on sand and mud bottom.

(73) **Windward Passage** extends between Lovango and Durlow Cays; it is 0.3 mile wide. **Durlow Cays**, within the entrance, cannot be mistaken. On the W side of the channel are Carval Rock and Blunder Rocks. Vessels of deep draft may take the passage between Lovango and Durlow Cays. If the wind dies, sailing craft may anchor at any time; the bottom is coral and broken shell in less than 60 feet. With the NE current running against the wind, this channel has a race that looks like broken water. Through Durlow Cays and between them and Hawksnest Point on St. John Island are deep and clear passages, but these are not recommended.

(74) **Middle Passage**, between Grass and Thatch Cays, is about 0.3 mile wide and presents no difficulties to powered vessels, the only dangers being a small rock awash nearly 150 yards W from the W end of Grass Cay, which is easily seen. Sailing vessels generally use this passage in leaving the sound. It may be entered from the N even on the ebb, provided the trades have not too much of a S slant.

(75) **Leeward Passage**, between Thatch Cay and the N side of St. Thomas, is about 0.4 mile wide, with general depths of 60 feet or more. A privately marked fish haven, covered at least 60 feet and centered in 18°21'12"N., 64°51'21.5"W., is near the E end of Leeward Passage.

(76) **Currents.**—Tidal currents with velocities up to 4 knots in Middle Passage and Windward Passage, and weaker currents in Leeward Passage, have been reported.

(77) Three islands and several rocks extend SE for 2 miles from the E end of St. Thomas. The islands are rugged, with cliffs fronting much of the shores. **Dog Rocks**, 9 feet high, are the most E danger of the group close off the E point of **Dog Island**. Current velocities up to 4 knots have been reported in the vicinity of Dog Island. Other rocks are as much as 0.35 mile from the shores of the islands.

(78) **Dog Island Cut**, between Dog Island and **Little St. James Island**, has depths of 17 to 55 feet. Two submerged rocks are in midchannel at the N entrance to the cut in about 18°18'08"N., 64°49'11"W. The cut should be used only by small boats with local knowledge. **St. James Cut**, between Little St. James Island and **Great St. James Island**, has depths of 15 to 22 feet, but caution is necessary to avoid **Welk Rocks** in the E approach and **The Stragglers**, on the W side. A rock awash is about 125 yards NW of the NE point of Little St. James Island. A reef extends from this point almost to the rock.

(79) **St. James Bay**, between Great St. James Island and the E end of St. Thomas Island, provides secure anchorage in depths of 23 to 50 feet, except in hurricanes. Small craft can anchor securely in Christmas Cove either N or S of the small cay 300 yards offshore. **Cow Rock**, 7 feet high, is the W of a group of rocks in the S approach to the bay. **Calf Rock**, 5 feet high, is the E rock of the group.

(80) **Current Hole**, at the N end of St. James Bay, provides a passage from the S coast of St. Thomas Island to Pillsbury Sound. **Current Rock**, 13 feet high and marked by a light, is in about the center of the passage. A depth of 24 feet can be carried through the 100-yard-wide channel E of the rock. The current velocity reaches a maximum of 3 knots through Current Hole and sets N and S. To stem the current, sailing vessels using the passage should await a N current and a steady breeze.

(81) **Cowpet Bay**, in the N part of St. James Bay, is 0.3 mile wide between **Water Point** and **Deck Point**. The bay has depths of 8 to 21 feet. The St. Thomas Yacht Club has a pier and other private facilities at the head of the bay.

(82) **Jersey Bay**, W of Cowpet Bay, is 1.4 miles wide between Deck Point and the cays E of **Long Point**. The bay has several cays and dangerous rocks scattered throughout the W part. A 7-foot spot is about 0.25 mile E of the E point of Cas Cay. **Benner Bay**, locally known as **The Lagoon**, is a smaller bay in the N part of Jersey Bay. It is one of the most protected small-boat harbors on St. Thomas Island. Several yacht clubs and marinas along the N shore of the bay have complete facilities for small craft. Berths, gasoline, diesel fuel, water, and some marine supplies are available. A 50-ton mobile hoist can handle craft up to 65 feet for hull, engine, and electronic repairs. To reach the facilities, pass E of the buoy off **Red Point**, the E point of **Cas Cay**, and follow the best charted water toward the whitewashed area on **Rotto Cay**. Pass Rotto Cay keeping it 100 yards on your starboard and proceed past **Grassy Cay** keeping it close by on the starboard. Proceed past Grassy Cay to within 100 yards of **Bovoni Cay** then head in a N direction to the facilities. The channel leading into Benner Bay is privately maintained and marked. In January 1981, severe shoaling was reported in the channel; the extent of shoaling is unknown. Mariners should seek local knowledge. Also, it was reported that submerged pilings may exist in the area. The

waters between Cas Cay and Patricia Cay are shoal with prominent breakers and entry in this area could be hazardous.

(83) The **S coast** of St. Thomas is very irregular with projecting rocky cliffs between coves and bays that are obstructed by rocks and shoals. Dangerous rocks extend up to a mile from shore.

(84) **Long Point**, the SE extremity of St. Thomas Island, is the terminus of a high prominent ridge with rocky cliffs 50 feet high.

(85) **Packet Rock**, a coral shoal about 100 yards in extent with a depth of about 5 feet, lies 0.7 mile WSW of Long Point. The sea breaks over the rock only in heavy weather, and it cannot be seen until close-to. A buoy is 300 yards SSE of the rock.

(86) **Capella Islands**, of which the westernmost is **Buck Island**, lie 1.7 miles SW of Long Point, and constitute a prominent landfall for making St. Thomas Harbor. The two small islands, of irregular outline, are partially covered with a scrubby growth and separated by a narrow channel almost closed by numerous uncovering rocks. A light, 125 feet above the water, is shown from a white tower on the highest point of Buck Island, near its E end. A shallow ledge extends 100 yards off the W end, and off the N side the depth is 30 feet. A fish haven, covered 40 feet and marked by private buoys, is on the N side of a bight at the SW end of Buck Island in about 18°16'42"N., 64°53'55"W. A small wharf and boat landing are at the head of the bight.

(87) Between Capella Island and St. Thomas Island the currents are weak.

(88) **Chart 25641.—Frenchcap Cay** is about 3.6 miles SE of Buck Island, and, like Buck Island, is a useful landfall for making St. Thomas Harbor. It is 350 yards long and 183 feet high, and is covered with grass and steep-to. The shoreline for the most part consists of high rocky cliffs.

(89) **Chart 25649.—St. Thomas Harbor**, in about the middle of the S coast of St. Thomas Island, is the only sheltered harbor in the Virgin Islands that can be entered by large vessels. Although the oval-shaped harbor is small and open to the S, it is well protected by the high hills surrounding the other sides and provides safe anchorage except during a hurricane.

(90) **Charlotte Amalie**, along the N shore of St. Thomas Harbor, is the most important city and capital of the U.S. Virgin Islands. Tourism comprises most of the commerce. Rum and bay rum are manufactured, and handicraft articles are made from raw materials imported from nearby islands.

(91) The port facilities are at the West Indian Dock on the S side of **Long Bay**, the E part of St. Thomas Harbor, and at the Ports Authority pier and quay on the N side of West Gregerie Channel. The principal imports include foodstuffs, textiles, clothing, building materials, machinery, and petroleum products. Exports include rum, perfumes, and sundry articles.

(92) **Prominent features.—Muhlenfels Point**, the E entrance point to St. Thomas Harbor, is high and steep at the shoreline. A large hotel on the point is conspicuous.

(93) **Hassel Island**, on the W side of the harbor entrance is indented by shallow coves and has several high wooded hills. **Cowell Point** is the S end of a ridge sloping up to **Cowell Battery**, the highest point on the island.

(94) **Signal Hill**, about a mile NW of St. Thomas Harbor, is the second highest peak on the island with a lighted tower on top. From it the main ridge extends ESE, passing less than 0.5 mile N of Charlotte Amalie. The town is built around the three spurs that



Lindbergh Bay

extend S from the ridge. **Frenchman Hill** is the W spur. **Berg Hill**, in the center, has a square white building on its S slope near the top. On **Government Hill**, the E spur, stands **Blackbeard Castle**, a remarkable 47-foot stone tower.

(95) To the E of Government Hill, **Bluebeard Hill** rises abruptly from the shore at **Frederiksberg Point** to a 224-foot summit on which **Bluebeard Castle**, an old 34-foot stone tower, is located.

(96) **Water Island**, SW of the entrance to St. Thomas Harbor, is indented by several small shallow bays, and the hilly land is covered by small trees and dense underbrush. **Flamingo Point**, the S end consists of brown rocky 100-foot cliffs. N of Flamingo Point on the W shore is **Flamingo Bay** which leads to **Flamingo Pond** and a small boat harbor and marina. A square tower is on 256-foot **Providence Hill**, 0.8 mile N of the point. There is a small pier on Providence Point that is used by the ferry serving Water Island. **Red Point**, a mile NW of Water Island, is a rugged red cliff on the W side of Lindbergh Bay.

(97) **Channels**.—The entrance channel, W of Muhlenfels Point and close E of Scorpion Rock, leads close SW of West Indian Dock; depths in the channel are about 27 feet. The entrance channel is marked by a lighted range and buoys. In April 1976, it was reported that depths of 10 to 14 feet could be taken to the waterfront at Charlotte Amalie.

(98) **East Gregerie Channel**, between Hassel Island and Water Island, has depths of 26 to 48 feet for the 350-yard center width. **Haulover Cut**, between Hassel Island and St. Thomas Island, has a least depth of 12 feet through the center of the narrow passage. At the SW entrance, a reef that uncovers extends about 80 yards into the cut from Hassel Island. Rocks, submerged and awash, border the N side of the channel. East Gregerie Channel is marked by lighted buoys. **Caution** is advised for all vessels traversing this area since it is an active seaplane landing area.

(99) **West Gregerie Channel**, between Water Island and St. Thomas Island, has depths of 26 to 60 feet for a 250-yard center width to the junction with East Gregerie Channel N of Water Island. The channel is marked by buoys and a light. A lighted radio tower at the base of Careen Hill has been reported to be an excellent mark to steer for when entering West Gregerie Channel.

(100) **Ruyter Bay**, a shoal bay on the NW side of Water Island, has a privately owned L-shaped pier, about 100 feet long with a 30-foot length at the outer end; in 1972, depths of about 6 to 10 feet were reported alongside. A depth of about 8 feet can be carried with local knowledge when approaching the pier from the NW.

(101) **Anchorage**s.—General, small craft, and arrival inspection anchorages are in St. Thomas Harbor and off Lindbergh Bay. (See **110.1** and **110.250**, chapter 2, for limits and regulations.)

(102) **Krum Bay**, NW of Water Island, has depths of 35 feet in the entrance, shoaling to 11 feet near the head. An oil company maintains a lighted T-head pier and a barge dock on the W side of Krum Bay, about 0.1 mile and 0.4 mile, respectively, N of **Mosquito Point**, on the W side of the entrance. The bay affords excellent anchorage for small vessels during a hurricane.

(103) **Lindbergh Bay**, close W of Krum Bay, is used as an anchorage by small sloops and motorboats. The entrance depths are 30 feet, gradually decreasing to a fine sand beach and several small piers at the head of the bay.

(104) **Dangers.—Green Cay**, 1 mile SE of Muhlenfels Point, is a small 24-foot islet covered with low underbrush. The islet is near the center of a coral reef that extends about 450 yards SW from shore. Another islet is 50 yards S of Green Cay.

(105) **Triangle** is a group of dangerous rocks between Green Cay and Muhlenfels Point. The N and SW parts of the group are partly awash. **Barrel of Beef**, 2 feet high, is the E foul area of the group. A detached coral rock covered 16 feet and marked by a lighted buoy is nearly 0.7 mile SSE of Muhlenfels Point.

(106) **Point Knoll**, a coral head with several submerged rocks, extends 50 yards SW from Muhlenfels Point; a depth of 20 feet is about 90 yards SW of the coral head. **Rohde Bank**, 0.2 mile NW of Muhlenfels Point, has a least depth of 17 feet.

(107) **Scorpion Rock**, in the entrance between Muhlenfels Point and Cowell Point, is a small coral rock with a least depth of 26 feet surrounded by depths of 27 to 29 feet. A lighted buoy marks the rock.

(108) **Rupert Rock**, 0.5 mile N of Muhlenfels Point at the narrowest part of the entrance channel, is 12 feet high and white on top. A drying reef and foul ground with less than 6 feet over it extends 100 yards W from the rock. A lighted buoy and a daybeacon are W of the rock.

(109) Foul ground with depths less than 6 feet surround Hassel Island and Water Island up to 300 yards from shore.

(110) **Porpoise Rocks**, a mile W of the S end of Water Island, consists of three reefs with rocks bare or awash and depths of 2 to 17 feet. A buoy is on the SW side.

(111) An unmarked fish haven is off the S side of Porpoise Rocks.

(112) A rocky ledge extends 0.4 mile S of Red Point. A steep-to rock at the outer end has a least depth of 3 feet over it.

(113) In 1980, an airport runway extension was under construction on the E side of **Brewers Bay** 0.6 mile NW of Red Point. The construction area extends about 800 yards W from shore and is surrounded by a rock dike. Caution is advised in the area.

(114) **Sandy Point Rock**, an elongated shoal extending 300 yards NW from the N end of Water Island, has a least depth of 3 feet and is marked by a light at the NW end.

(115) Care should be taken when navigating in the main harbor of Charlotte Amalie, Haulover Cut, and East Gregerie and West Gregerie Channels, because of their use as seaplane operating areas. The seaplanes generally take off on a SE heading from Cay Bay to Rupert Rock, and occasionally from Crown Bay through the East Gregerie Channel, also on a SE heading. The seaplanes generally land on a NE heading between the light in West Gregerie Channel and Haulover Cut, then proceed into Cay Bay. The seaplanes, when landing, usually traverse the narrow Haulover Cut area at a high rate of speed. Vessels navigating in these waters should remain alert to the presence of seaplanes when operating in the areas defined above.

(116) **Tides and currents.**—The tide in St. Thomas Harbor is chiefly diurnal; the diurnal range is about 0.8 foot. Water depths have decreased several feet after a severe tropical storm. The tidal current in the entrance is noticeable.

(117) The current velocity in East and West Gregerie Channels is about 0.5 knot, although a greater velocity has been reported in the western side of Crown Bay. Caution should be exercised to avoid being set onto the piers in the bay, particularly with a strong E wind.

(118) **Routes.**—From W: pass 0.5 mile or more off the S end of Water Island, then steer for Muhlenfels Point until on the entrance range, and then proceed into the harbor on a heading of **344°**. The prominent white catchment area on the W side of Berg Hill helps in picking up the range in the daytime. From S: pass a mile or more W of Buck Island and enter on the range. From E: set a course to pass about midway between Buck Island and St. Thomas Island and enter on the range.

(119) **Pilotage, St. Thomas.**—See Pilotage, U.S. Virgin Islands (indexed as such) early this chapter. Pilotage is available from the St. Thomas Pilots, Virgin Island Port Authority. Office address is: P.O. Box 2616, Charlotte Amalie, St. Thomas, U.S.V.I. 00803; telephone 340-774-2333, 340-744-2250, 340-774-8580 (boathouse), FAX 340-777-9694. Pilots can also be contracted through the marine operator, WAH, on VHF-FM channels 16, 28, and 85 (international), 0500 to 2400 hours, daily.

(120) The pilots boathouse (station) is on the waterfront at St. Thomas Old Marine Terminal.

(121) St. Thomas Pilots serve the main harbors of Charlotte Amalie, St. John, East and West Gregerie Channels, and Crown Bay.

(122) Pilots board vessels entering St. Thomas Harbors from three points at the entrances. Vessels entering via West Gregerie Channel are boarded about 0.5 mile W of West Gregerie Channel Lighted Buoy 2, just W of Porpoise Rocks. For vessels entering through East Gregerie Channel, the pilot boards no less than 1.0 mile S of East Gregerie Channel Lighted Buoy WRI. Vessels entering the port through the main harbor entrance channel can pick up the pilot from a position in the channel S of St. Thomas Harbor Entrance Lighted Buoy 2.

(123) The pilot boats, HARRY MAGRAS, 45 feet long, and WINSTON PARRIS, 42 feet long, each have black hulls with white superstructures. Both boats have the word PILOT on their superstructures, painted in orange. The pilot boats display the standard pilot signals; "HOTEL" flag by day, and a white light over a red light at night (all-around lights). The pilot boats and pilot station monitor VHF-FM channels 16 and 14, and work on channel 16. Vessels to be boarded should contact the pilot boat prior to arrival for vessel speed (approximately 3 to 8 knots) and boarding side, and rig the pilot ladder about 3 feet above the water.

(124) An equatorial current is reported to run, starting in East Gregerie Channel and traveling out West Gregerie Channel at a velocity of about 1 to 3 knots.

(125) **Towage.**—Tugs up to 2,500 hp are available for docking vessels. The tugs monitor VHF-FM channel 16.

(126) **Quarantine, customs, immigration, and agricultural quarantine.**—(See chapter 3, Vessel Arrival Inspections, and appendix for addresses.)

(127) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(128) Seamen requiring emergency hospital attention are taken to the municipal hospital.

(129) Charlotte Amalie is a **customs port of entry**. Vessels are boarded at anchorage or at their berths. The customs office is in the Post Office Building.

(130) **Coast Guard**.—The Coast Guard has a **Marine Safety Detachment** in Charlotte Amalie (See Appendix for Address.)

(131) **Harbor regulations**.—Local rules and regulations for the Port of St. Thomas are enforced by the Port Authority Dockmasters at Blyden Terminal.

(132) **Wharves**.—The West Indian Company Dock, along the S side of Long Bay, is the primary cruise ship terminal at Charlotte Amalie. The well-protected 2,750-foot marginal wharf has depths of 30 feet reported alongside except for 27 feet alongside the easternmost 300 feet.

(133) The waterfront of Charlotte Amalie, is a concrete marginal wharf with depths of 7 to 15 feet alongside. It is primarily used by small sailing vessels and motor launches trading with the nearby islands. The dock is also used for ferry boats, harbor tour boats and a hotel water taxi.

(134) Kings Wharf, a 300-foot finger pier extending from the point E of the waterfront, is used by Coast Guard vessels. In 1982, depths of 9 feet were reported along the N side and 13 feet along the S side. A 3-foot depth is about 200 yards ESE from the outer end of the pier in 18°20'27"N., 64°55'49"W.

(135) The waterfront of Crown Bay is a curved concrete marginal wharf operated by the Virgin Islands Port Authority. Depths of 14 to 15 feet are reported alongside. The wharf is used primarily for receipt of general cargo.

(136) The Crown Bay Passenger Facility, operated by the Virgin Islands Port Authority, is in **Crown Bay** on the N side of West Gregerie Channel. The pier, which extends E from shore, has a 500-foot S face and a 200-foot N face, and depths of 36 to 38 feet alongside. Just N is the Home Port Dock, which is 435 feet with depths of 23 feet alongside.

(137) **Supplies**.—Groceries and some marine supplies are available at Charlotte Amalie. When available, water can be delivered from pipelines at the West Indian Dock, Crown Bay Passenger Facility or at anchorage from a barge.

(138) **Repairs**.—A 100-foot-long drydock, just S of the Crown Bay Passenger Facility, can handle vessels up to 130 feet long. Machine shops can make minor above-the-waterline repairs. For larger vessels, the nearest facilities are at San Juan and the Panama Canal.

(139) **Small-craft facilities**.—A marina on the E side of Long Bay has finger piers with 10 to 12 feet alongside. Berths, water, electricity, and marine supplies are available. A fuel pier with 28 feet alongside has gasoline and diesel fuel.

(140) A marina on the W side of Cay Bay, N of Hassel Island, has berthing and mooring facilities in about 15 feet of water. Gasoline, electricity, water, ice, and marine supplies are available. A marine railway can handle craft up to 65 feet long for hull and engine repairs. The approach to the marina is in a seaplane operating area so be alert for aircraft.

(141) A marina, on the N side of Crown Bay Passenger Facility, has finger piers with reported 12 to 15 feet alongside. Gasoline, electricity, water, ice, and marine supplies are available.

(142) **Chart 25641**.—**Saba Island**, 202 feet high and triangular in shape, is 2.4 miles W of Flamingo Point. The N part of the island is low, but the S part has precipitous red cliffs 150 feet high

along the S shore. Two small lagoons surrounded by mangroves are near the N end. A landing can be made on the sand beach along the NW shore. About 150 yards E of the island is a reef with a bare rock 5 feet high, and numerous rocks awash over which the sea always breaks. Another reef awash lies 100 yards S of the W end of the island.

(143) **Turtledove Cay**, 50 feet high, 100 yards N of Saba Island, is connected with Saba Island by a reef bare at low water. About 0.1 mile W of the cay is a cluster of rocks awash. Between these rocks and the cay is a boat channel. **Dry Rock**, about 0.5 mile SW of Saba Island, comprises a group of rocks bare and awash; the highest rock is 2 feet high. **Flat Cays**, 0.8 mile NE from Saba Island and 1.3 miles SW from Red Point, consist of two small islets, 32 and 11 feet high, respectively. About 300 yards E of the S cay is a rock awash, surrounded by a breaking reef.

(144) **Currents**.—Inshore the current is weak, but between Flat Cays and Saba Island, a tidal current sets ESE and WNW with velocities up to 1 knot.

(145) **Southwest Road**, between Flat Cays and Perseverance Bay, affords an excellent anchorage with the wind as far S as ESE.

(146) Vessels may anchor as convenient after entering through any of the channels between the islands and shoals S. Sailing vessels should enter from the E between Water Island and Porpoise Rocks, favoring Water Island and pass between Flat Cays and the shoal S of Red Point.

(147) In November 1993, a submerged wreck, covered 28 feet, was reported by the NOAA ship MT. MITCHELL in the W approach to Southwest Road in about 18°18'48.1"N., 65°02'29.0"W.

(148) **Range Cay**, an islet 21 feet high, lies close to the shore 0.7 mile NW of Red Point. **Black Point**, 1.2 miles NW of Red Point, terminates in rocky cliffs 40 to 50 feet high.

(149) **Perseverance Bay**, between Black Point and **Lucas Point** to the W, has depths of 13 fathoms, about 0.4 mile from the shore. Coral reefs, bare at low water, fringe the beach. Lucas Point rounding and rocky, is marked by 60-foot cliffs.

(150) **Fortuna Bay**, between Lucas Point and **David Point**, consists of two small bays separated by a broad point that is high and faced by precipitous cliffs 200 feet high. The shore is generally rocky with cliffs up to 70 feet high.

(151) **St. John Island**, about 2 miles E of St. Thomas Island, is 8 miles long, and up to 4 miles wide. Its E end for 3 miles is formed by a narrow neck of land from 1 mile to less than 0.5 mile across, and from its inner end the coast turns sharply S, forming a deep bight which terminates at Ram Head, the S point of the island. The central and W portions are comprised of irregular hills, the highest of which is **Bordeaux Mountain**, 1,277 feet high. The hills and mountains are mostly covered with trees, brush, and some patches of grass.

(152) Most of the population of St. John Island is located in two small settlements, Cruz Bay at the W end and Coral Bay at the E end. Tourism is the principal commerce; foodstuffs and building material are brought into Cruz Bay by small interisland vessels.

(153) Some groceries, gasoline, diesel fuel, and water can be obtained at the settlement. Small ferryboats carry passengers and mail between St. Thomas Island and St. John Island. Land transportation is mostly by taxi or by small sightseeing buses. Telephone and radiotelephone services are available.

(154) The Government administration is at Cruz Bay.

(155) **Quarantine, customs, immigration, and agricultural quarantine.**—(See chapter 3, Vessel Arrival Inspections, and appendix for addresses.)

(156) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(157) **Chart 25647.—Moravian Point**, on the end of a peninsula S of Cruz Bay, is the westernmost part of St. John Island. **Mingo Rock**, which is awash and breaks, is 175 yards WSW of Moravian Point. A group of four rocks awash, with surrounding depths of 17 to 30 feet, is about 0.1 mile WSW of Mingo Rock.

(158) **Steven Cay**, 0.4 mile W of Moravian Point, is 28 feet high and marked by a light. A 31-foot rock is just S of **May Point**, the S extremity of Steven Cay. **Skipper Jacob Rock** is 0.1 mile E of the S end of Steven Cay.

(159) **Cruz Bay**, on the W side of St. John Island, is a small cove used by small interisland vessels bringing supplies and tourists to the island. The entrance is marked by a light 12 feet above the water, and private buoys mark the channels through the cove. In 1982, the reported controlling depth was 14 feet in the channel to the public pier in the SE part of the bay. The Government House on the peninsula extending to **Battery Point** is a prominent landmark. A marina of the National Park Service is in the cove E of Battery Point; a depth of 6 feet can be taken to the 80-foot pier and bulkhead.

(160) **Caneel Bay**, 0.8 mile NE of Cruz Bay, is the site of the Caneel Bay Plantation resort development. A line of private marker buoys restricts the use of boats in the bay except for the channel leading to a small pier at the head of the bay. Motorboats provide transportation for tourists to St. Thomas from the pier.

(161) **Durloe Cays** are three islets W of Hawksnest Point. **Henley Cay**, the largest, is 70 feet high and about 300 yards wide, and has a small pier on the S side. **Ramgoat Cay**, 310 yards NE of Henley Cay, is 30 feet high, and **Rata Cay**, the smallest is 0.2 mile WNW of Henley Cay.

(162) **Hawksnest Point**, a projecting point forming the W shore of Hawksnest Bay, is wooded. In the N part is a circular hill 130 feet high. Off the extreme point is **Hawksnest Rock**, bare and 25 feet high. **Hawksnest Bay**, E of the point, is small and of no commercial importance. Off its S shore are numerous rocks.

(163) **Perkins Cay** is an islet close to the E point of Hawksnest Bay. **Trunk Cay**, a grass-covered islet 48 feet high, is about 0.5 mile E of Perkins Cay. **Trunk Bay**, between the two cays, is used extensively by skindivers. An area in the bay in which boats are restricted is marked by private buoys.

(164) **Johnson Reef**, a coral formation 0.4 mile NE of Perkins Cay, is 500 yards long and over 0.2 mile wide; it breaks except in very smooth weather. A ledge, over which is a 20-foot passage, connects this reef with the mainland to the SE. The reef is marked by a lighted buoy at its N end and by an unlighted buoy at its S end.

(165) **Cinnamon Cay**, 32 feet high and covered with tall grass and cactus, is about 0.7 mile E of Trunk Cay. An underwater reef, SW of Cinnamon Cay, is marked by a private buoy. Private buoys also mark an area in which boats are restricted from Cinnamon Cay to America Point to the E. **America Point** is 2 miles E of Hawksnest Point; back of America Point rises **America Hill**, 526 feet high, which separates Cinnamon Bay from **Maho Bay**. The head of Maho Bay is shoal and has a fine sand beach. **Maho**

Point is the tip of a short peninsula between Maho and Francis Bays, formed by the spur of a 198-foot hill 300 yards E.

(166) **Francis Bay**, S of Mary Point, is somewhat protected to the N by Whistling Cay, and affords good anchorage in 50 feet, sandy bottom.

(167) **Whistling Cay**, the 202-foot islet 300 yards W of Mary Point, is covered with trees. Its N shore is precipitous, with cliffs 130 feet high. A gravel beach is along the SE side. **Fungi Passage**, between the cay and Mary Point, has a least depth of 21 feet, but on account of the baffling winds from the adjacent high land it is difficult for sailing vessels.

(168) **Chart 25641.—Mary Peninsula**, a 578 foot-high headland in the form of a ridge, is connected with St. John by a low divide, separating Francis Bay from Mary Creek. **Mary Point**, the W end of the peninsula, has bluffs 135 feet high. The N shore consists of high weatherbeaten cliffs with large boulders along the waterline.

(169) **The Narrows**, a channel about 0.3 mile wide between the 10-fathom curves, is the W entrance to the passage between the N coast of St. John and the SW coast of Tortola. This passage leads into Flanagan Passage and Sir Francis Drake Channel. Tidal currents in The Narrows and the passage E attain velocities of 2 to 4 knots.

(170) **Leinster Bay** is a double indentation between Mary Peninsula on the W and **Leinster Point**, 48 feet high, on the E; it is about 0.8 mile in length. **Mary Creek**, the W part of this bight, makes well in behind high land to N. The E part, **Waterman Bay**, is partially protected by **Waterlemon Cay**, 30 feet high, 250 yards W of Leinster Point. The cay is bold, and is separated from St. John Island by a channel 200 yards wide with 12 feet of water. Vessels may anchor under the cay about 200 yards from shore. **Annaberg Point**, 96 feet high, SW of Waterlemon Cay, is faced by a conspicuous landslide.

(171) **Threadneedle Point**, 0.5 mile E of Leinster Point, is precipitous, with cliffs up to 70 feet high. From Threadneedle Point the coast trends in a general ESE direction for 3.5 miles to **East End Point**, the E extremity of the island. **Haulover Bay**, 3 miles SE of Leinster Bay, offers the best anchorage of the small bights along the N coast.

(172) **Privateer Point**, 0.4 mile S of East End Point, is a projecting point 164 feet high, separating **East End Bay** from **Privateer Bay**, two small bights open to the SE. **Red Point**, a headland W of Privateer Bay, is the S end of a high ridge.

(173) **Flanagan Island**, 127 feet high, lies 0.7 mile SE of Privateer Point. A rock off the W side is 45 feet high.

(174) **Flanagan Passage**, the westernmost of the passages leading into Sir Francis Drake Channel from S, consists of a group of channels separating St. John and Norman Islands. The channel between Privateer Point and Flanagan Island is 0.7 mile wide; that between Flanagan Island and the Indians is about 1.2 miles wide; and that between Flanagan and Norman Islands is 1.4 miles wide.

(175) Approaching Flanagan Passage from E, haul close around the W side of Norman Island, inside Santa Monica Rock, which may be done at a distance of 300 yards. From W, line up the Indians and Mount Bellevue, the highest hill on the E end of Tortola, and enter W of Santa Monica Rock on a heading of about 016°.

(176) **Coral Bay**, the large bay extending N into St. John between Red Point and Ram Head, is open to the SE. The narrowest part of the entrance, between Moor Point and Lagoon Point, is

1.2 miles wide. **Leduck Island**, 85 feet high, lies in the entrance to Coral Bay, midway between Red Point and Ram Head.

(177) **Currents.**—The current velocity is about 0.7 knot and sets SW and NE across the entrance to Coral Bay; between Flanagan Island and Privateer Point its velocity is reported to be 1.5 knots. In the bay there is no current, and the range of tide is about 1 foot.

(178) **Moor Point** is the thin rocky SW extremity of East End Peninsula. **Turner Point** is the knob at the end of the peninsula separating Round Bay and Hurricane Hole. **Fortberg Hill**, N of Harbor Point, is nearly circular in shape, 426 feet high, covered with trees, and very prominent. **Lagoon Point**, the S entrance point of Coral Harbor, is fringed by a coral reef 200 yards wide and bare at low water. **Sabbat Point**, 0.5 mile S of Lagoon Point, is the end of a long high rock forming the buttress of **Sabbat Hill**, 101 feet high.

(179) **Ram Head**, the S point of St John is a bold headland, with two conspicuous hills. The E side of the head has rocky cliffs 100 to 150 feet high. A heavy sea generally runs off the point.

(180) The only danger in the approach to Coral Bay for vessels drawing less than 18 feet is **Eagle Shoal**, about 0.7 mile S of Leduck Island. The shoal consists of three round patches of coral; the least depth is 1½ feet. Close to and around them the depths are 6 to 7 fathoms, and 13 fathoms a little over 100 yards to the S. Coral Bay has no towns; the community is scattered among several points along the shore.

(181) **Round Bay**, the NE of the three arms of Coral Bay, is 0.9 mile wide at the entrance. The several shoal patches of about 2¼ fathoms should be avoided. **Pelican Rock**, 7 feet high, is in the NE part of the bay. The best anchorage in Round Bay is off Moor Point.

(182) **Hurricane Hole**, the N arm of Coral Bay, is 0.6 mile wide at the entrance W of Turner Point. The shoreline is indented by several small bays that afford protection from almost any direction for small vessels. A shoal with rocks awash extends out 100 yards on the W side of Hurricane Hole.

(183) **Coral Harbor**, the NW arm of Coral Bay, is narrow, and the deep part of the bay is restricted to a width of 100 yards or less by encroaching shoals from the side and head of the harbor. The entrance channel into the harbor is marked by private buoys. The anchorage ground, although smooth with ordinary winds, is narrow, and being on a lee shore it is available only for small vessels. A small-boat wharf with 3 feet alongside is at the head of the bay.

(184) Coral Bay is a **customs port of entry**.

(185) The S coast of St. John is very irregular with bold projecting points terminating in cliffs over 100 feet high between the small bays and coves that have fringing reefs and shoals near the shores. The dangers are within 0.5 mile of the coast.

(186) **Lameshur Bay**, 1.5 miles NW of Ram Head, is divided into three smaller bays by projecting points. The easterly one affords good shelter for small vessels in 6 fathoms about 0.2 mile offshore. The middle bay has a good anchorage generally used by sailboats, and a sand beach.

(187) The shore for 0.6 mile W of Lameshur Bay consists of very prominent 150-foot white cliffs.

(188) **Chart 25647.—Reef Bay**, 2.7 miles W of Ram Head, is a large open bight, but the shores are fringed by coral reefs. A passage leads through the reefs to a protected small-boat harbor in **Genti Bay**.

(189) **Great Cruz Bay**, 5.5 miles W of Ram Head, affords good shelter for small vessels. The depth is 21 feet in the entrance, decreasing to 9 feet in the middle of the bay.

(190) **Chart 25641.—St. Croix Island**, 32 miles S of St. Thomas and St. John Islands and 50 miles SE of the mainland of Puerto Rico, is the largest of the U.S. Virgin Islands. The island is 19 miles long and averages about 3.5 miles wide. The N side is somewhat mountainous, particularly in the W part. **Mount Eagle**, 1,165 feet high and about 5 miles from the W end, is the highest point on the island. Southward from the mountains, the land is composed of fertile undulating valleys. The S side is nearly straight and generally low.

(191) Water commerce with St. Croix Island is handled through Christiansted on the N coast, Frederiksted on the W coast, and the industrial complexes in Krause Lagoon and Limetree Bay along the central S coast. Tourism accounts for a good part of the commerce on the N, E, and W coasts; a petroleum refinery and a bauxite ore and alumina plant are the major commerce on the S coast. Some cattle are raised for export to nearby islands.

(192) **Tides and currents.**—The tides are chiefly diurnal and are small; the diurnal range is about 0.8 foot. There is usually a slight W current between St. Croix Island and St. Thomas Island. No perceptible current has been observed at Christiansted Harbor, but a moderate W flow is reported outside the light at Fort Louise Augusta.

(193) National Ocean Service parties have reported that off East Point tidal currents of about 1 knot set NW and SE in calm weather. Close to East Point strong currents set N and S. Trade winds increase the NW flow and decrease the SE flow. A very strong W current setting around East Point and through Buck Island Channel was noted when the trade wind was blowing. A strong NW current was noted off Southwest Cape.

(194) In 1982, the NOAA Ship MT. MITCHELL reported a prevailing W current with a drift of 1 to 1½ knots on the S side of St. Croix, with a countercurrent inside the reef along the shore.

(195) **Weather.**—The weather at St. Croix is wholly influenced by the maritime tropics and the prevalent trade winds. The average temperature at St. Croix is 80.2°F with an average maximum of 86.3°F and an average minimum of 73.6°F. August is the warmest month with an average temperature of 82.5°F and January is the coolest month with an average temperature of 77.2°F allowing for an annual spread of only 5.3°F. Temperatures in excess of 90°F have occurred in each month except January and February and the all-time maximum (93°F) has occurred numerous times during the months of April, September, October, and November. The coolest temperature on record is 61°F recorded in January 1955. The average annual precipitation for St. Croix is 41.24 inches; 25% of this amount falls during the peak hurricane months of August and September. Since 1950, at least 27 tropical cyclones have come within 50 miles of St. Croix. Of these 27 storms, 23 of them affected St. Croix during the two-month period of August and September. Hurricane Georges did considerable damage throughout all the Virgin Islands in September 1998. Hurricane Marilyn caused much damage in the region during September 1995, and hurricane Hugo raked the region with 120-knot winds as the center passed directly over the island on September 18, 1989.

(196) There is no regular land breeze at St. Croix Island, but when the trade wind is light during the day it generally falls calm in the night. From June to September, when the trade wind is usually light, occasionally strong winds from the SW blow across the island with much rain. The ground swell accompanying northers is especially heavy in the vicinity of White Horse.

(197) **Local regulations.**—Local rules and regulations for St. Croix are enforced by the U.S. Virgin Islands Port Authority,

Gallows Bay, Christiansted, St. Croix, U.S. Virgin Islands 00820. No radio watch is maintained at the Port Authority but contact may be made through the marine operator.

(198) **Hams Bluff**, the NW extremity of St. Croix Island, is a conspicuous 100-foot cliff with the land back of it rising to high hills. **Hams Bluff Light** (17°46'18"N., 64°52'18"W.), 394 feet above the water, is shown from a white cylindrical tower.

(199) From Hams Bluff, the N coast of St. Croix Island has slightly jutting rocky points with sandy beaches between for 5.5 miles to Baron Bluff.

(200) **Baron Bluff** is the sea front of the triple spurs of a 395-foot hill. From Baron Bluff E to **Salt River**, the shore consists of low rocky cliffs.

(201) **Salt River Point** is 1.7 miles E of Baron Bluff. W of the point a narrow passage with depths of 6 feet leads through a reef to **Salt River Bay**. The shores of the bay are mostly mangrove swamps with several openings leading to boat landings. A marina with berths, electricity, water, ice, and a launching ramp is in the bay; minor repairs can be made.

(202) An underwater habitat is off the mouth of Salt River in about 17°47'12"N., 64°45'30"W. An 18-foot supply boat showing a strobe light is moored above the habitat.

(203) **White Horse**, 400 yards N of Salt River Point, is a rock over which the sea always breaks. A boat channel with a depth of about 11 feet leads between the rock and the shore.

(204) From Salt River Point, the coast turns abruptly SE for 3 miles to Christiansted. In this area, the hills near the coast are covered with grass and low bushes, and the low shoreline has a narrow sand beach.

(205) **Chart 25645.—Christiansted Harbor**, on the N coast of St. Croix Island 10 miles E of Hams Bluff and 7.7 miles W of East Point, is a port of call for vessels drawing up to 16 feet. The harbor is protected by a reef and bank that extends clear across the entrance, except for the channel opening. **Gallows Bay** is in the SE part of the harbor. Most of the harbor is shoal.

(206) **Christiansted**, on the S shore of the harbor, is the largest town on St. Croix Island. The principal imports include foodstuffs, building materials, petroleum products, and clothing. Exports include rum and cattle.

(207) **Prominent features.—Fort Louise Augusta**, on the E side of the harbor entrance, is an old battery on a projecting point. Christiansted Harbor Channel Entrance Range Front Light, 45 feet above the water, is shown near the fort.

(208) **Protestant Cay**, an islet in the harbor, is surmounted by an old stone building and a hotel. The ruins of Fort Sofia Frederika are at the N end of the cay.

(209) **Channels**.—The entrance is N of Fort Louise Augusta through a crooked dredged channel marked by buoys, lights, and a 164° lighted entrance range, thence E and S of Protestant Cay to a turning basin and to Gallows Bay Dock. In April 1990, the controlling depth was 14 feet, with 11 to 15 feet in the basin with lesser depths along the NE, SE, and SW limits of the basin. Shoaling has occurred close to the edges of the marked channel into Christiansted Harbor; extreme caution is advised in transiting the channel.

(210) Inside the harbor, a privately dredged channel with private aids leads W of the main channel to facilities in the SW part of the bay. In 1981, a depth of 17 feet was reported in the channel and alongside the berthing facilities.

(211) A channel, with natural depths to 11 feet and marked by private lighted buoys, is E of Round Reef and used by schooners and small boats.

(212) A 15-foot passage over the S portion of Scotch Bank is used by small vessels coming from the east; local knowledge is necessary.

(213) **Anchorage**.—Vessels anchor ENE of Protestant Cay in depths of 9 to 30 feet according to draft. Holding ground in this area is reported to be hard; caution is advised to ensure against dragging. Small boats anchor in Gallows Bay and along the E side of the harbor. A yacht anchorage, supervised by the U.S. Virgin Islands Port Authority, is on the W side of Protestant Cay. During a hurricane or gale vessels anchor in Gallows Bay and small boats sometimes anchor in Salt River Bay.

(214) **Dangers.—Scotch Bank**, a 1.8-mile-long sand shoal extending NE from Fort Louise Augusta, is on the E side of the harbor entrance. Depths of 2 to 20 feet are on the shoal, which is easily seen except when the sun is ahead.

(215) **Long Reef**, a 2-mile-long strip nearly awash in places, forms the NW side of the harbor. Shoal water extends E from the reef to the channel marked with buoys.

(216) **Round Reef**, W of Fort Louise Augusta, is circular with a spot bare at low water near its center and several spots with depths of 1 foot.

(217) The harbor is shoal with depths less than 6 feet outside the circuitous channel marked by buoys. Several visible wrecks and submerged obstructions are along the E side of the harbor.

(218) **Routes**.—Approaching Christiansted Harbor from NE, give Buck Island a berth of 2 miles or more to avoid the bar N of it. From W, all dangers will be avoided by staying 1 mile or more off the N coast. The entrance is marked by a lighted 164° range, and buoys, lights, and daybeacons mark the entrance channel into the harbor.

(219) **Pilotage, Christiansted**.—See Pilotage, U.S. Virgin Islands (indexed as such) early this chapter. Vessels are boarded from a motorboat just outside the sea buoy (Buoy 1, 17°45.8'N., 64°41.8'W.). Strangers are advised to take a pilot and should not attempt to enter at night without one.

(220) **Quarantine, customs, immigration, and agricultural quarantine**.—(See chapter 3, Vessel Arrival Inspections, and appendix for addresses.)

(221) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.) A municipal hospital is at Christiansted.

(222) Christiansted is a **customs port of entry**.

(223) **Harbor regulations**.—Local rules and regulations for Christiansted harbor are enforced by the **harbormaster**, whose office is on the waterfront.

(224) **Wharves**.—Gallows Bay Dock (17°44'57"N., 64°41'57"W.), in the E part of Gallows Bay, has berthing space of 400 feet on the W side and 300 feet on the E side; depths of 16 feet are reported alongside. A roll-on/roll-off ramp with 16 feet alongside is E of the dock. Forklifts, mobile cranes up to 70 tons, and covered and uncovered storage are available. General cargo is received and shipped.

(225) **Kings Wharf**, the W 250-foot section of a 600-foot bulkhead stone quay 300 yards W of Gallows Bay Dock and just NNW of the fort, has reported depths of about 8 feet alongside. The wharf is used by tour boats.

(226) A 380-foot-long pier, 0.9 mile W of Gallows Bay Dock, is operated by the Virgin Island Cement Company. Pipelines for

handling raw cement and fuel oil are on the pier. A reported depth of 17 feet is alongside.

(227) An L-shaped pier, just W of the long pier, has about 200 feet of berthing space with 17 feet reported alongside and is operated by Masonry Products, Inc. A pipeline for handling raw cement is on the pier.

(228) **Supplies and repairs.**—Some marine supplies and limited amounts of water are available at Christiansted. Gasoline and diesel fuel are available near the waterfront; bunkers can be trucked in from the S side of the island. Facilities for repairs to oceangoing vessels are limited to minor above-the-waterline repairs.

(229) **Small-boat facilities.**—St. Croix Marine Inc., NE of Gallows Bay Dock, has four finger piers; two, 100 feet long, and two, 200 feet long; depths of 12 feet are reported alongside. A marine railway at the facility can haul craft to 100 feet long; a transfer lift can handle craft to 60 tons. A crane can handle craft to 30 tons. Berths, gasoline, diesel fuel, water, ice, and marine supplies are available. Hull, engine, electronic, and refrigeration repairs are available.

(230) **Chart 25641.**—Beyond Fort Louise Augusta, the N coast trends E for 7.3 miles to East Point, the E end of the island. The coast is fringed by coral reefs, behind which in several places small vessels may find protection.

(231) **Punnett Point**, 1.4 miles E of Fort Louise Augusta, forms the E side of **Punnett Bay**, a semicircular cove 0.2 mile wide. NE of Punnett Point, at a distance of about 0.4 mile, is **Green Cay**, an islet 55 feet high at its S end. S to the beach and between Green Cay and Pull Point, the area has depths of only 6 to 18 feet with numerous coral heads.

(232) A marina is in **Southgate Pond** 0.2 mile E of Punnett Point. The entrance channel is protected on the W side by a breakwater. In 1982, 10 feet was reported in the entrance channel, with 8 to 10 feet available in the basin. Berths, gasoline, and diesel fuel are available.

(233) **Pull Point**, 2.3 miles ENE of Fort Louise Augusta, is a small projecting point terminating in cliffs 35 feet high. A stone house is visible at the point. **Chenay Bay** is the bight W of the point.

(234) **Buck Island**, 340 feet high, is 4.3 miles ENE of Fort Louise Augusta and about 1.5 miles off St. Croix. The island is on the S edge of a coral bank which extends W about 0.8 mile, then sweeps around a mile N of the island. This forms **Buck Island Bar**, 1.5 miles long. Shoals extend about 1.8 miles E of Buck Island. The island lies on the route from E to Christiansted Harbor. A light, 339 feet above the water, is shown from a red pyramidal skeleton tower on the summit of the island. Buck Island lies within the Buck Island Reef National Monument, the boundary of which is marked by private buoys.

(235) **Diedrichs Point**, the S extremity of Buck Island, is low. Several spots with 12, 17, and 20 feet lie from 1 mile E of the island to 1.7 miles ESE of it. **Buck Island Channel** lies between Buck Island and the adjacent reefs and St. Croix. Moderate-draft vessels may approach it from either N or E. **Channel Rock**, awash, lies 1.8 miles W of East Point.

(236) The N coast of St. Croix from Pull Point to East Point is fringed by a coral reef. Behind this reef are several anchorages for small boats, but local knowledge is necessary to use them. Entrance is made at **Coakley Bay**, a bight 0.8 mile E of Pull Point. The opening in the end of the reef can be entered by steering **180°**

with Coakley Mill directly ahead. A light in about 17°46.1'N., 64°38.2'W., marks the E side of the opening and should be kept close aboard when entering. In May 1982, a large coral head, covered 7 feet, was reported about 100 to 150 yards W of the light.

(237) **Pow Point**, 1.5 miles E of Pull Point, is rocky with a 130-foot hill 250 yards inland. **Tague Point**, 1.1 miles E of Pow Point, is sharp and rocky with a 155-foot hill 0.2 mile SSW. **Tague Bay**, 0.7 mile wide between the bluffs at Tague Point and **Romney Point**, has a curving beach of sand and shingle. The bay provides anchorage for light-draft vessels entering behind the reef through a break NE of Tague Point. A private yacht club and the West Indies Laboratories of Fairleigh Dickinson University research pier are along the shore. Water and ice are available.

(238) **Cottongarden Point**, a prominent rocky point with a 55-foot knoll, is 1.6 miles E of Tague Point and opposite the E end of the long reef paralleling the coast. **Cramer Park**, a public beach and park operated by the Insular Government, is W of the point.

(239) **East Point**, the E extremity of St. Croix, is a bluff. A 225-foot hill is 100 yards WNW, and **Morne Rond**, 380 feet high, is a conspicuous round hill near the point.

(240) **Lang Bank**, an extensive bank 3 to 5 miles wide stretches 9 miles NE from the E end of St. Croix Island. Along its edge is a wall-sided narrow coral ledge which, commencing about 3 miles E of Buck Island, sweeps around in a convex form for about 14 miles, terminating 2 miles S from East Point. Its N part is from half a mile to 1 mile wide, with depths of 5½ to 10 fathoms. The S portion is about 100 to 600 yards wide, with 7 to 10 fathoms on it. The shoalest part of Lang Bank breaks in heavy weather and should be given a wide berth.

(241) From East Point, the S coast of St. Croix Island trends WSW for 20 miles to Southwest Cape. This coast is bordered by a dangerous broken coral reef which extends from East Point to nearly abreast of Long Point, 3.6 miles E of Southwest Cape. Behind this reef are several anchorages suitable for small local boats. Along the coast are many small bights and indentations, but all are shallow and do not afford anchorage except for small craft. Many old mills and the aerolight on the SW part of the island are prominent.

(242) **Point Cudejarre**, a sharp point with a 25-foot bluff and a 120-foot hill NNW, is 0.3 miles SW of East Point. **Grass Point**, 3 miles WSW of East Point, is a long narrow point marked by a 43-foot knob.

(243) **Mount Fancy**, about 4.7 miles W of East Point, is a conspicuous double hill, 245 feet high, which forms the E point of **Great Pond Bay**. Good anchorage for vessels of 10-foot draft, in hard sand bottom, can be had in this bay. An entrance range is the E tangent of Milord Point in line with Sight Mill; when about 100 yards off the point haul around to **064°**, pass W of a 7-foot shoal 200 yards E of Milord Point, and run for 0.3 mile, anchoring in 13 to 14 feet. **Milord Point**, the west entrance point of the bay, is a promontory of **Fareham Hill**, 192 feet high and prominent.

(244) **Vagthus Point**, sharp and rocky, is 9.5 miles WSW of East Point. **Canegarden Bay**, 1.2 miles wide, forms an irregular crescent to the W of Vagthus Point.

(245) In 1980, an offshore oil wharf was under construction 1.4 miles S of Vagthus Point. When completed, the facility will provide 3,000 feet of berthing space along both the N and the S face. Submerged pipelines extend NW from the dock to an oil refinery at the head of Canegarden Bay.

(246) **Limetree Bay**, close W of Canegarden Bay, is the site of a private deep-draft oil-handling facility operated by Hess Oil Virgin Islands Corporation (HOVIC) and a container terminal owned by the Virgin Islands Port Authority. Large tankers call here to deliver crude oil and to load petroleum and petrochemical products.

(247) **Channels.—Limetree Bay Channel**, privately dredged, leads from deep water to a large turning basin with E and W basins. The channel is privately marked by a **334°** lighted range visible 4° on each side of the channel centerline and by an auxiliary **334°** lighted range, close E of the first range, visible 4° on each side of the channel centerline, and by lights and lighted buoys. In 1978, the reported controlling depth in the channel was 60 feet with a draft limit of 55 feet.

(248) In 1976, Limetree Bay and vicinity was undergoing extensive modification and dredging. Mariners are advised to exercise caution while navigating the inner harbor area.

(249) **Pilotage, Limetree Bay.**—See Pilotage, U.S. Virgin Islands (indexed as such) early this chapter. Pilotage is compulsory. Pilots board vessels about 2.5 miles SSE of Limetree Bay Channel Lighted Buoy 1. Vessels are requested to call HOVIC Marine on VHF-FM channel 9, 10, 11, or 16 for approach procedures and docking instructions. Night entry is limited to vessels not over 100,000 deadweight tons. There are no restrictions on sailings.

(250) **Towage.**—HOVIC maintains a large fleet of tugs capable of handling vessels to 300,000 deadweight tons.

(251) **Quarantine, customs, immigration, and agricultural quarantine** matters are handled by representatives from Christiansted who board vessels at their berths. Documents required are the same as at U.S. ports.

(252) **Wharves.**—A total of nine oil-handling docks are in the bay. A sulfur conveyor and a roll-on/roll-off dry cargo dock is on the N side of the E basin. Reported depths alongside are from 38 to 55 feet at the oil docks and 12 feet at the roll-on/roll-off dock.

(253) A 1,400-foot container wharf and two roll-on/roll-off ramps are 0.3 mile W of the causeway. Depths of 32 feet are reported alongside. Deck heights are 12 feet at the container wharf and 3 feet and 6 feet at the roll-on/roll-off ramps. A 30-ton container crane, 52 acres open storage, and 30,000 square feet covered storage are available.

(254) **Supplies.**—Dry goods and food supplies are handled by local ship chandlers. Bunker fuels and diesel oil are supplied by the refinery. Limited amounts of fresh water are available.

(255) **Krause Lagoon** indents the S shore of St. Croix Island immediately W of Limetree Bay and about 12.3 miles WSW of East Point. The bauxite ore and alumina plant at the head of the lagoon, known as **Port Alucroix**, is owned and operated by the Martin Marietta Aluminum Corp. Large vessels call here to deliver bauxite ore and coal fuel supplies, and load alumina.

(256) Three 215-foot silos marked by strobe lights are prominent at Port Alucroix.

(257) **Channels.**—Krause Lagoon Channel, a privately maintained dredged 35-foot channel with dikes paralleling it on either side in the N part, leads from deep water through the reefs to a turning basin and two wharves at the head of Krause Lagoon. The channel is privately marked by lighted buoys, lights, and a **349.5°** lighted range. In 1988, the controlling depth was 33 feet. Navigation in the channel is limited to daytime only.

(258) **Currents.**—The current in Krause Lagoon is reported to set W and to vary in velocity with the wind. The current does not completely dissipate until inside Port Alucroix.

(259) **Pilotage, Port Alucroix** See Pilotage, U.S. Virgin Islands (indexed as such) early this chapter. Vessels entering Krause Lagoon Channel are boarded about 2.5 miles SSE of Krause Lagoon Channel Entrance Lighted Buoy 1. Vessels entering Limetree Bay are boarded about 3 miles SE of Limetree Bay Channel Entrance Lighted Buoy 2. The area within a 4-mile radius of Limetree Bay Channel Entrance Lighted Buoy 2 is constantly congested with mostly very large heavy laden tank vessels entering and leaving Limetree Bay Channel. Maneuverabilities for these vessels are restricted. All vessels are advised to avoid loaded tank vessels and use extreme caution in and near this 4-mile area. The area from 5 to 10 miles S of Krause Lagoon Channel Entrance Lighted Buoy 1 is sometimes congested with vessels waiting to meet a pilot at the designated boarding areas; vessels desiring a pilot should contact HOVIC Marine on VHF-FM channel 10, 11 or 16 for approach procedures and docking instructions.

(260) **Towage.**—Tugs are supplied by HOVIC Marine.

(261) **Quarantine, customs, immigration, and agricultural quarantine.**—(See chapter 3, Vessel Arrival Inspections, and appendix for addresses.)

(262) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(263) **Wharves.**—The concrete bulkhead wharves on the E and W sides of the terminal each have 1,000 feet of berthing space. The berths on the W side of the terminal are used for discharging bauxite and coal, and those on the E side are used for loading aluminum. A Government pier, open to the public for launching small craft, is on the E side of the entrance channel opposite the turning basin.

(264) **Supplies.**—Emergency supplies of bunker fuels, diesel oil, and freshwater are available. The terminal has no ballast disposal facilities.

(265) Dumping of waste oil in the harbor is prohibited. Masters are cautioned that the discharge of any oil, oily waste, or other refuse in the harbor can result in serious damage to the shore plant cooling water intakes and every precaution should be exercised to prevent such an occurrence.

(266) **Cross Channel**, privately dredged, connects Limetree Bay and Krause Lagoon Channel. In 1982, the reported controlling depth was 35 feet with a maximum acceptable draft of 33 feet. In 1982, a container terminal was reported under construction on the N side of the channel.

(267) **Chart 25644.—Long Point**, 3.6 miles E of Southwest Cape, is a low projecting point covered with grass. W of the point is **Long Point Bay**, which is shoal. **Southwest Shoal**, 1.2 miles S of Long Point, has only 6 feet of water over it, and E to Krause Point the outlying reefs are the most dangerous along the S coast. They generally break, but as several shoal spots are S, the area should be approached with caution.

(268) The area out to the 100-fathom curve between Long Point and Southwest Cape and between Long Point and the entrance to Krause Lagoon Channel and Limetree Bay Channel is used extensively by recreational and commercial trap and line fishermen, both day and night. Most of the trap and line fishing is done in water less than 15 fathoms. Large vessels are requested to exercise caution and to consider these fishing activities when approaching and departing from the industrial complex in Krause Lagoon and Limetree Bay.

(269) A channel, privately marked and entered about 2.2 miles 118° from Southwest Cape, leads in an E direction to mooring buoys about 1.1 miles E of Long Point; channel and mooring buoys are maintained by Texaco Caribbean Inc., St. Croix, Virgin Islands. The channel is primarily for the use of tankers arriving at the mooring buoys.

(270) **Southwest Cape**, the SW extremity of St. Croix Island, is a low point projecting 1.2 miles in a SW direction. The point is covered by low bushes and trees. A shoal area, sand and coral, extends S, with a least depth of 9 feet, at a distance of 0.8 mile from the shore. A buoy marks the SW extremity of this shoal. The 5-fathom curve is 1.6 miles S of Long Point and nearly a mile S of Southwest Cape, but W of the point it is only 200 yards off. The 100-fathom curve lies nearly 2.5 miles SW of Southwest Cape. **Southwest Cape Light** (17°40'48"N., 64°54'00"W.), 45 feet above the water, is shown from a grey skeleton tower near the tip of the cape.

(271) Caution is necessary in approaching Southwest Cape. The point, fringed by shoals, is low for some 3 or 4 miles to the high land of the interior. This may cause the mariner to overestimate his distance from the coast, especially at night.

(272) **Sandy Point**, the W extremity of the island, is 0.5 mile NNW of Southwest Cape.

(273) The W coast of St. Croix Island trends NNE from Southwest Cape for 2.4 miles to Frederiksted, thence NW for 2 miles, and then curves NE for 2 miles to Hams Bluff. The coast consists mostly of sand beach with the land back of it sloping gently upward in the S part and the hills gradually working W to the shore in the N part. The slopes are covered by grass and bushes. The beach is steep-to with the 10-fathom curve lying 0.5 mile or less offshore.

(274) **Frederiksted**, on the W coast of St. Croix Island, 2.4 miles N of Southwest Cape and 3.7 miles S of Hams Bluff, is a port of call for cruise ships, Government vessels, and occasionally for small cargo vessels. Large vessels can dock at the long municipal pier in the 4-mile-wide open roadstead. Imports include building materials and vehicles.

(275) **Prominent features.—Frederiksted Harbor Light** (17°43'00"N., 64°53'06"W.), 42 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark at the inner end of the municipal pier. **Fort Frederik** is a red brick structure 125 yards NE of the light.

(276) A radar tracking station (17°43'13"N., 64°51'18"W.), illuminated at night, is on **St. George Hill** about 1.5 miles E of Frederiksted. The station is prominent, especially at night, when it is visible for over 20 miles.

(277) **Anchorage**.—Vessels anchor in depths of 30 to 60 feet NW and SW of the municipal pier according to draft. Small boats anchor near the waterfront. Anchorage between the municipal pier and the warping buoys to S is prohibited.

(278) **Currents**.—The Frederiksted harbor pilot reports that a westerly current from 225° to 315°, with a set of not more than 1 knot, and 2 knots in extreme cases, may be experienced when approaching the pier. In addition, the pilot reports that there seems to be an almost ever present circular current beginning about 0.25 mile off the pier with an initial set to the S and a final set to the N when abeam of the pier's end.

(279) **Restricted areas** have been established off the W coast of St. Croix Island, N and S of Frederiksted Harbor. (See **334.1490**, chapter 2, for limits and regulations.)

(280) **Routes**.—From S, the shoals S of Southwest Cape will be avoided by staying a mile or more offshore. At night stay in the white sector of Frederiksted Harbor Light on the approach to the pier.

(281) **Pilotage, Frederiksted**.—See pilotage, U.S. Virgin Islands (indexed as such) early this chapter. Vessels are boarded 1 mile off the municipal pier.

(282) **Quarantine, customs, immigration, and agricultural quarantine**.—(See chapter 3, Vessel Arrival Inspections, and appendix for addresses.)

(283) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.) A municipal hospital is at Frederiksted.

(284) **Harbor regulations**.—Local rules and regulations for Frederiksted harbor are enforced by a **dockmaster**, whose office is on the shoreward end of the municipal pier. Copies of the regulations may be obtained from the Virgin Islands Port Authority, Gallows Bay, Christianstead, St. Croix, U.S. Virgin Islands 00820.

(285) **Wharves**.—A 1,895-foot pier, including the mooring extends from the waterfront at Frederiksted. A 402-foot loading platform (pierhead) is about 203 feet inshore of the outer dolphin. Depths along both sides of the pier decrease from about 59 feet at the outer end to about 35 to 48 feet alongside the loading platform, and thence lesser depths inshore of the E end of the loading platform. In heavy winds, large vessels sometimes drop their outboard anchor to assist in maneuvering alongside.

(286) The pilot advises that with strong winds from the W, and especially from the NW, the pier is not a safe berth because of the unusual rise and fall of the water at dockside. Under these conditions, a strong wind-driven current with an easterly set can be expected. Mariners should approach the pier at a 45° angle to avoid damage resulting from scraping along the pier.

(287) A roll-on/roll-off facility with landing ramp is close S of the municipal pier. A line of submerged pilings and dolphins extends about 80 yards SW from the ramp. Depths in the approach and alongside the ramp are about 14 feet.

(288) A landing platform for ships' tenders is on the S side of the E end of municipal pier; depths of about 8 to 10 feet reported alongside.

(289) **Supplies and repairs**.—Water, bunker fuels, diesel oil and gasoline can be trucked in from nearby. Limited above-the-waterline repairs are available.

(290) Submarine cables extend WSW to the 100-fathom contour from **Sprat Hole**, 1.6 miles N of Frederiksted. Mariners are requested not to anchor in this area.

(291) **Chart 25641**.—A general description of the **British Virgin Islands** is included in this chapter for a convenient reference to both the United States and British groups. Complete information is included in Pub. No. 144, Sailing Directions (Enroute), Caribbean Sea, published by the National Imagery and Mapping Agency, and West Indies Pilot, Vol. II, published by the British Ministry of Defense Hydrographic Department.

(292) **Little Tobago Island**, 3.5 miles NE of Hans Lollik Island, is nearly 0.5 mile long and 279 feet high. It is steep-to except on its SE side. **Tobago Island**, 1 mile NE of Little Tobago Island, is 0.8 mile long and about 538 feet high. A small rock, awash and steep-to, is about 100 yards off the N point. The SE side of the island is fringed with coral, but elsewhere the coastal cliffs are steep-to. A few rocks lie close off the NW point.

(293) **Watson Rock**, steep-to and 89 feet high, is about 0.3 mile W of the SW point of Tobago Island. **King Rock**, 0.6 mile S of the SW point, is awash and steep-to. It is near the S end of a bank, over which are general depths of 6 to 9 fathoms, extending about 0.7 mile S of Tobago Island.

(294) **Mercurius Rock**, 0.8 mile E of the N end of Tobago Island and the only danger between that island and Jost Van Dyke Island, is small and steep-to. It is covered 7 feet. When using the passage between Tobago and Jost Van Dyke Islands, the east side should be favored.

(295) **Jost Van Dyke Island**, about 2 miles E of Tobago, is 3.5 miles long, lofty, rugged, and steep-to. Near the middle of the N part a summit rises to 1,070 feet. **Great Harbor** and **Little Harbor**, on the S side of the island, are suitable only for small vessels. Great Harbor is about 0.5 mile in extent, with depths of 4 fathoms to about 0.2 mile from its head, and Little Harbor has depths of about 8 fathoms inside the entrance.

(296) **Little Jost Van Dyke Island**, connected by a shallow ledge to the NE end of Jost Van Dyke Island, is 367 feet high. **Green Cay**, 108 feet high, is a small islet close E of Little Jost Van Dyke Island. **Sandy Cay**, nearly 1 mile S of Green Cay, is 66 feet high at its E end. It is surrounded by shoal water, and foul ground extends 200 yards from the E and W ends. The channel between it and Jost Van Dyke Island is 0.6 mile wide; the island shore must be favored.

(297) **Tortola**, the largest of the British Virgin Islands, is 10 miles in length and 3.5 miles wide. **The West End**, the W extremity, is about 2 miles NE of Mary Point, St. John. The highest summit in the Virgin Islands is 1,740-foot **Mount Sage** in the W part of the island; rugged hills rise somewhat abruptly from the shores on all sides.

(298) **Great Thatch Island**, about 0.6 mile N of Mary Point from which it is separated by The Narrows, is 1.7 miles long, and near its center rises to a peak 613 feet high. The E point is bold and steep-to. **Thatch Island Cut**, the channel between Great Thatch and The West End, is deep. Sailing vessels should not attempt Thatch Island Cut from the N except with a S current, as the eddies and currents are very strong.

(299) **The Narrows**, between St. John Island and Great Thatch Island, give access to the channel which extends between Tortola and St. John and leads to Sir Francis Drake Channel and Flanagan Passage. Tidal currents in The Narrows and the passage E attain velocities of from 2 to 4 knots.

(300) **Little Thatch Island**, 0.4 mile S of The West End, is about 0.5 mile long. **Frenchman Cay**, about 0.3 mile E of Little Thatch Islet, is 400 feet high. **Sopers Hole** is a deep little basin, 1 mile long and about 0.3 mile wide, between Frenchman Cay and Little Thatch Island, on the S, and the W end of Tortola, on the N side. At the E end of Sopers Hole the muddy bottom is the best holding ground. There is a small pier on the N side of Sopers Hole.

(301) In the center of Sopers Hole is a depth of 13 fathoms which gradually decreases to 6 fathoms at 100 yards from the shore; the bottom is sandy. The passage between Little Thatch Island and Frenchman Cay is from 6 to 7 fathoms deep.

(302) Vessels from S may enter Sopers Hole by the passage between Frenchman Cay and Little Thatch Island, or by that between the latter island and the W end of Tortola. These passages are not difficult, but the W ends of Tortola and Little Thatch Island must be given a berth of more than 200 yards.

(303) Sailing vessels taking Thatch Island Cut should approach it with a S current, which will shoot a vessel into it. A vessel coming from the E will find the passage E of Little Thatch Island the best, as she will have a leading wind, can luff up closer under the W end of Frenchman Cay, which is steep-to, and shoot into Sopers Hole with either a S or N current. When leaving, pass out to the N through Thatch Island Cut, or, if bound into Sir Francis Drake Channel, round the W end of Little Thatch Island at a distance of somewhat more than 200 yards and haul to the wind. With the E tidal current of 3 or 4 knots on the lee beam, she will have a fair set through the channel between St. John and Tortola. The W tidal current has a similar velocity. There is no danger on either shore. A vessel must be prepared to meet the gusts and baffling winds which rush out from the valleys of Tortola.

(304) On the NW side of Tortola are numerous small bays or bights, of which Cane Garden Bay, the largest, is the only one on the N side of the island that affords anchorage even for small vessels. Across its entrance is a bar with 12 feet of water, inside of which are depths of 18 to 24 feet. A 5-fathom shoal lies in the approach to the bay, about 0.4 miles N of the S entrance point.

(305) **Chart *25611.—Road Harbor**, on the S side of Tortola 6 miles east of its W end, is the only port of entry in the British Virgin Islands for all vessels. Sopers Hole at the W end of Tortola is a limited port of entry. The harbor is exposed SE, but the other sides are surrounded by high hills with their spurs reaching the shores.

(306) **Road Town**, on the W shore of Road Harbor, is the capital of the British Virgin Islands. Imports include foodstuffs, building material, and general merchandise. Livestock are exported.

(307) **Prominent features.**—There are four prominent landmarks in Road Town, these being Fort Burt Hotel, a group of four pink buildings, situated on the W side of the harbor on Burt Point, the Administration Building (Customhouse), a white flatroofed building standing behind the main wharf, and about midway between these two positions stands the Administration Residence (Commissioner's House), an isolated, white concrete building standing on a low knoll. To the N of the Administration Building, the white belfry of the Anglican church shows above Wickham Cay, a low mangrove-covered islet, in the NW part of the harbor. The floodlighted oil tanks on Shirley Point on the E side of the harbor N of Scotch Bank are reported to be conspicuous.

(308) **Channels.**—The principal channel into Road Harbor is between Scotch Bank and Lark Bank, thence on the lighted range to the pier at Road Town. Small vessels also enter the harbor between the lighted buoy marking the outer limits of the coral reef about 400 yards E of Burt Point and Lark Bank. The controlling depth is 36 feet to the anchorage area, but only 7½ feet to the dock.

(309) **Anchorage.**—Deep-draft vessels anchor in depths of 8 to 12 fathoms inside of Scotch and Lark Banks. Anchorage may also be obtained in the N part of the harbor, N of Harbor Rock, in about 8 fathoms. Vessels proceeding to the deep-draft anchorage should steer 321° from a point about 1.5 miles 180° from Half Moon Point until the lighted buoy off Burt Point is abeam. Ships desiring to make the N anchorage should proceed as to the deep-draft anchorage until the Commissioner's House is abeam. Ships desiring to anchor S of Harbor Spit should proceed as previously mentioned until the range lights come in line 290°, which will lead to a depth of about 9 fathoms between Burt Point and Harbor Spit. The best berth is just S of the range line.

(310) **Careening Cove**, in the lee of the dry reef off Burt Point, is small but well sheltered, with depths of 4 to 6 feet.

(311) **Dangers**.—Although depths of 36 to 48 feet can be taken to the anchorage areas in Road Harbor, irregular bottom, and many patches of rock and coral, with depths of 13 to 36 feet lie within about 1.5 miles of Hog Valley Point (Hog Point) and 2 miles of Slaney Point.

(312) Depths of from 22 to 25 feet will be found over extensive shoals with limits of about 1.1 miles S of Hog Valley Point and 1.1 miles S of Slaney Point. A 17-foot patch is about 0.5 mile SE of Hog Valley Point, and a 18-foot patch is about 0.75 mile SW of Slaney Point.

(313) A coral reef about 250 yards wide and partially covered by mangrove extends NE from Slaney Point to Burt Point; a lighted buoy marks the outer limits of the reef at Burt Point.

(314) **Denmark Banks**, 0.5 mile SE of Burt Point, has two rocky patches with a least depth of 13 feet. The Bluff, bearing 073° and open S of Nora Hazel Point, leads S of these banks. **Lark Bank**, 0.4 mile E of Burt Point, has a least depth of 15 feet over a coral head. **Scotch Bank**, 0.8 mile E of Burt Point and marked by a buoy at its S edge, has a least depth of 10 feet.

(315) **Harbor Spit**, 0.4 mile N of Burt Point, is an extension of the shoal water in the NW part of the harbor. Depths on the spit are from 4 to 17 feet; a buoy marks the SE end of the spit. **Harbor Rock**, 250 yards SE from the end of the spit, has a least depth of 20 feet.

(316) **Tides**.—The tides in Road Harbor are chiefly diurnal, and the range is small.

(317) **Pilotage, Road Harbor**.—No licensed pilots are available, but reliable mariners are available to bring ships into the harbor.

(318) **Wharves**.—A 180-foot cargo pier at Road Town has depths of 7½ feet at the head and on the sides. A 106-foot passenger pier to the S has depths of 7 feet alongside. Small sloops are used for lighterage when necessary.

(319) **Supplies**.—Limited amounts of groceries and water are available. Gasoline and diesel fuel can be obtained from offshore pipelines on the NE side of Road Harbor.

(320) **Repairs**.—A small marine railway in Careening Cove can handle boats about 40 feet in length and 6 feet in draft. Another marine railway in **Bauger Bay**, on the NE side of Road Harbor, can handle small boats of 6-foot draft for repairs.

(321) **Communications**.—Daily passenger launch service is maintained between Road Harbor and St. Thomas. Radiotelephone and radiotelegraph communications are available. There is air service between other islands.

(322) **Chart 25641**.—**Guana Island**, 810 feet high and 1.7 miles long, is about 0.3 mile N of Tortola. The passage between these islands has a depth of about 29 feet in the fairway. On the W headland separating **White Bay** and **Muskmelon Bay** is a large rock shaped like an Iguana's head, known locally as **Lizard Head Rock**. A safe anchorage in 7 to 12 fathoms is in the entrance to White Bay.

(323) **Great Camanoe**, a mile E of Guana Island, is about 2.5 miles long. It consists of two parts connected by a low narrow neck of land between **Lee Bay** and **Cam Bay**. **Scrub Island** is close E of Great Camanoe, from which it is separated by a narrow channel with many shoals and rocks.

(324) **Little Camanoe** and **Marina Cay** are SW and SE, respectively, of the S end of Great Camanoe. They are all con-

nected to the N side of Beef Island by a shoal bank on which are several rocks and reefs. The channel N of Beef Island is quite open and easily navigated by large yachts. **Shallow Rock** is a 3-foot shoal off the W point of **Trellis Bay** on the N coast of Beef Island. A light is shown from **Bellamy Cay** in the middle of the bay. A small marine railway is in the bay.

(325) A hotel is on Marina Cay; launches, yachts, air compressors for aqualungs and other diving equipment are available.

(326) **Beef Island**, about 2.4 miles long and 660 feet high in its E part, is separated from the E end of Tortola by a narrow shoal channel which should be used only with local knowledge. In 1973, a bascule bridge with an unknown clearance was constructed across the channel. **The Bluff**, the S extremity of the island, is a good landmark for vessels bound to Road Harbor. During strong NE winds excellent anchorage will be found in the lee of Beef Island, about 0.7 mile W of The Bluff. An airfield is on Beef Island. **Buck Island**, 1.1 miles SW of Beef Island and close off the SE side of Tortola, is 170 feet high at its SE end.

(327) **Sir Francis Drake Channel** is a passage bounded on the NW by Tortola and the islands off its E end, and on the SE by the chain of islands extending between Virgin Gorda and St. John. It can be entered by most vessels through any of the passages in the latter chain of islands or the passages on either side of **Dog Islands**.

(328) E of Buck Island the depths are regular, about 13 to 14 fathoms, but W of that island the bottom is very irregular, especially in the approach to Road Harbor. In the S portion of the W part, the general depths are 17 to 27 fathoms, but there are several coral patches with depths of 4 to 10 fathoms. Anchorage is found anywhere in this channel E of Buck Island, but the bottom is hard, being a thin bed of sand over coral, and therefore requires a good scope of chain.

(329) In Sir Francis Drake Channel there is scarcely any current except close inshore, where small vessels may gain some advantage from it when beating to windward during the NE flow.

(330) **Flanagan Passage**, the westernmost of the passages leading into Sir Francis Drake Channel from the S, is a group of channels between St. John and Norman Islands. It and connecting passages have been described previously in this chapter.

(331) **Norman Island**, 1.6 miles E of Flanagan Island, is about 2.3 miles long and 440 feet high near its SW extremity. Foul ground is close off its NE and SW ends. **Ringdove Rock**, covered by 2 fathoms, is about 300 yards W of the NW point of Norman Island. **Santa Monica Rock**, 0.7 mile SW of Norman Island, is a small patch 1¾ fathoms deep.

(332) **Pelican Island**, 180 feet high, is about 0.5 mile N of Ringdove Rock. About 200 yards W of it are **The Indians**, four remarkable small pinnacle rocks, 50 feet high. A 6½-fathom shoal lies 0.7 mile NNW of Pelican Island.

(333) **The Bight**, a small inlet in the W side of Norman Island, provides excellent anchorage. The shores are steep-to, and Ringdove Rock is the only danger when entering. The wind in the lee of the island, however, is so baffling that sailing vessels may have to anchor at the entrance and warp in. Although the bight is open to NW, St. John Island prevents any sea from setting in, and holding ground is good. Safe anchorage with the regular trade wind may also be found in **Privateer Bay**, on the W side of Treasure Point.

(334) **Peter Island**, NE of Norman Island, is in the form of an elbow, 440 feet high at its W part. **Carrot Rock**, 84 feet high, lies about 0.3 mile off the S end of the island, and **Carrot Shoal**,

covered $1\frac{3}{4}$ fathoms, is about 0.4 mile SW of the rock. Some 6-fathom patches lie within 0.5 mile of the N side of the island.

(335) **Great Harbor**, a small bight on the N side of Peter Island, is about 0.5 mile in extent. It may be entered easily at any time. Deep water is close to shore, and the holding ground is excellent. **Little Harbor**, a short distance W of Great Harbor, is smaller and more exposed, but has characteristics very similar to the latter.

(336) Owing to the shape of Peter Island, the passage between it and Norman Island is rather crooked, but has a least depth of 6 fathoms. It is seldom taken by sailing vessels. Carrot Shoal can be avoided by keeping Norman Island abroad.

(337) **Dead Chest**, nearly 0.5 mile off the NE end of Peter Island, is an islet 200 feet high; a group of rocks extends about 0.2 mile S from its E end. A $4\frac{1}{2}$ -fathom patch lies about 0.7 mile NW of the islet.

(338) **Blonde Rock**, covered $1\frac{1}{2}$ fathoms, is about 0.6 mile ENE of Dead Chest. **Salt Island Passage**, 1.5 miles wide between Dead Chest and Salt Island, is generally smooth. Blonde Rock can be avoided by keeping 0.5 mile from the E side of the passage.

(339) **Salt Island**, about 2 miles NE of Peter Island, rises to a height of 380 feet in its N part. A rock awash lies close off its NE end. The passage between Salt and Cooper Islands is constricted to a width of about 0.3 mile by the rocks and an islet off the nearest point of Cooper Island. This passage should never be attempted by a sailing vessel. **Cooper Island**, NE of Salt Island, is 1.7 miles long and 530 feet high at its S end. **Dry Rocks** are 300 yards off the NE side of Cooper Island, and **Carval Rock**, 110 feet high and steep-to, is 0.8 mile ENE of **Markoe Point**, the S point of Cooper Island.

(340) **Ginger Island**, about 1 mile E of Cooper Island, is 500 feet high and steep-to at its NE and SE ends. Some rocks lie close off its W end. The passage between Ginger and Cooper Islands may be taken by powered vessels, but sailing vessels may meet trouble.

(341) **Round Rock**, 220 feet high, is the southernmost of a chain of islets and rocks extending SSW from the SW end of Virgin Gorda. **Round Rock Passage**, between Ginger Island and Round Rock, is the easternmost of the passages leading into Sir Francis Drake Channel from S. It is the best for vessels coming from S. The passage is about 0.7 mile wide and easily located from its position in relation to Fallen Jerusalem, 1.2 miles to the NE. Sailing vessels will find it advantageous to use this passage as the islets on the weather side offer no obstruction to the prevailing winds. The SE and NW tidal currents attain a velocity of about 1 knot.

(342) **Chart *25609.—Virgin Gorda** is easily distinguished on making the land, as it rises gradually to the distinct summit of 1,370-foot **Virgin Peak**. The island, extremely irregular in outline, consists of a central portion from which there are peninsulas extending E and SSW. The E peninsula consists of irregular rugged hills which terminate at **Pajaros Point** in an astounding pinnacle rock 120 feet high. The SW peninsula is more regular in outline and 250 to 450 feet high, but it is joined to the central portion by an isthmus only 200 yards wide.

(343) The W side of the SW peninsula consists of immense granite blocks which lie scattered about on the shore. **Colison Point** is the NW extremity of the peninsula. The islets and rocks to the S as far as Round Rock, 2 miles distant, are also of granite; the largest, about 140 feet high, nearly 0.5 mile from the S end of

the island, is named **Fallen Jerusalem** because of its resemblance to a town in ruins.

(344) Several islets are in the N part of Sir Francis Drake Channel. **Great Dog**, the southeasternmost, is 270 feet high and steep-to at its W end; rocks fringe its N and S sides. **George Dog**, the northernmost, is 250 feet high and has some detached rocks about 0.2 mile N of it. **Cockroach Rock** lies about 0.2 mile W of it. A rock covered 2 fathoms is about 0.1 mile S of Cockroach Rock. **West Dog**, the westernmost, is 150 feet high, with its W side bold and steep-to. A rock covered $2\frac{1}{2}$ fathoms is about 0.1 mile E of West Dog.

(345) **Tow Rock**, 1.2 miles WNW of West Dog, has a depth of $2\frac{1}{2}$ fathoms over it but is steep-to; it may be avoided by passing close to West Dog or Scrub Island.

(346) **Seal Dogs**, 1.3 miles NE of George Dog and 1 mile W of **Mountain Point**, the NW extremity of Virgin Gorda, are a cluster of three small islets. The N islet is the smallest and only 6 feet high, the southeasternmost is 74 feet high, and the westernmost and largest is 100 feet high. The passage is clear on either side of the group.

(347) In **Western Roads**, off the W side of Virgin Gorda, are two excellent anchorages for vessels of any draft. The N is situated in the bight between Mountain and Colison Points, and is partially protected to the NW by Dog Islets. It seldom, however, blows hard to the W of N, and the only thing to be prepared for is the ground swell in the winter when it is better to anchor in about 13 fathoms of water, midway between Great Dog and Virgin Gorda. Here, with good ground tackle and a long scope of chain, there will be nothing to fear, as the rollers seldom are accompanied by much wind.

(348) The S anchorage, in 13 fathoms, between Colison Point and Fallen Jerusalem, is the best for sailing vessels because, if necessary, they can weigh and run out to W with more ease than from the N anchorage. The holding ground is good at both places, and the water is usually smooth. A small patch of $4\frac{1}{4}$ fathoms lies 0.4 mile W of Colison Point, and **Burrow Rock**, with $1\frac{1}{2}$ fathoms, is 1 mile S of Colison Point. The anchorages may be approached from either N or S as the passages are clear except between West Dog and Scrub Island, where Tow Rock lies. On the N side of Virgin Gorda are several small slightly wooded islets and cays.

(349) **Chart *25610.—Mosquito Island**, about 0.6 mile long and 290 feet high, the highest of the islets off the N side of Virgin Gorda, is 1 mile ENE of Mountain Point. The channel separating it from **Anguilla Point**, on Virgin Gorda, is shoal and only 175 yards wide. The NE end is fringed by a reef, and a chain of small detached rocks extends 300 yards NNE. **Mosquito Rock**, the outermost, is 23 feet high.

(350) **Colquhoun Reef**, which dries in patches, extends nearly 0.6 mile SE from Mosquito Rock, and is steep-to on its NE side. On the SW side is a small sandy islet, about 2 feet high and sparsely covered with coarse grass. **Prickly Pear Island**, the largest of the islets off the N side of Virgin Gorda, is about 0.8 mile E of Mosquito Island. It is 1 mile long and 237 feet high. **Asbestos Point**, its E end, is 0.2 mile from the nearest part of a small peninsula of the E arm of Virgin Gorda, and the channel between is shallow and foul. In the middle of it is **Saba Rock**, 15 feet high.

(351) **Cactus Reef**, extending 300 yards W of Cactus Point, the NW end of Prickly Pear Island, is steep-to on its N side; the sea breaks on it even with a slight swell.

(352) **Gorda Sound**, is an excellent and roomy harbor between Virgin Gorda on the S and Mosquito Island, Colquhoun Reef, and Prickly Pear Island on the N. It is sheltered from all winds and protected from rollers. As there is no health officer or other Government representative, vessels before visiting it should obtain pratique at Road Harbor, Tortola.

(353) In the approach are uniform depths of 9 to 12 fathoms. The entrance between the 3-fathom curves of Colquhoun and Cactus Reefs is about 250 yards wide with depths of 17 to 42 feet. Deeper water is inside the entrance. Private buoys mark the outer limits of Cactus and Colquhoun Reefs.

(354) The W portion of the sound is foul, with several shoals of 2 to 3 fathoms and some coral patches of less than a fathom. **Gorda Rock**, 0.3 mile SE of Colquhoun Reef, has a least depth of 30 feet. **Creek Shoal**, off the S side of the entrance to **Gun Creek**, is of coral sand with a least depth of 21 feet.

(355) **Oyster Rock**, about 150 yards off the S shore in the approach to Biras Creek, is a pinnacle rock with only 2 feet of water on it, surrounded by a shallow patch. **Biras Creek** is in the SE corner of Gorda Sound.

(356) The tide in Gorda Sound is chiefly diurnal. The tidal currents at the entrance are seldom more than 0.5 knots, but the inward current sets toward Prickly Pear Island. Between Mosquito Island and Anquilla Point, the eastgoing current has a velocity of from 1 to 1.5 knots.

(357) **Routes**.—Powered vessels coming from the E approach Gorda Sound by Necker Island Passage, which lies between Virgin Gorda and Herman Reefs. The approach is dangerous at night. Bring Virgin Peak to bear **261°** and steer for it on that bearing until the N extremity of Necker Island bears **279°**, distant 6.8 miles. Then alter course to pass at least 0.5 mile N of Necker Island. When Virgin Peak bears **211°**, steer for it until Gnat Point bears **177°** and Mosquito Rock bears **255°**, then steer for the center of the entrance channel between Cactus and Colquhoun Reefs, which should be entered on a **170°** course; no marks can be given for this narrow channel, but with a favorable light no difficulty should be experienced in passing safely through it.

(358) Coming from N it is better to pass W of Anegada and approach with Virgin Peak on a bearing between **132°** and **155°**.

(359) Sailing vessels can follow the direction for powered vessels, but if coming from the N and passing E of Anegada, they should not attempt to pass close to windward of Horse Shoe Reef. This has caused many disasters.

(360) **Eustatia Island**, on the shoal bank E of Prickly Pear Island, is 172 feet high and 0.3 mile long. Its N side is foul for 300 yards off, from which a barrier reef extends to Pajaros Point. Outside this foul ground there are two detached patches with depths less than 3 fathoms, one about 0.6 mile ENE and the other about 0.5 mile E of the E extremity of Eustatia Island. These patches lie on an extensive bank with depths of from 3 to 5 fathoms.

(361) In the lee of this barrier reef is **Eustatia Sound**, in which small vessels will find safe anchorage. The main entrance is through a small cut in the reef about 0.5 mile E of Eustatia Island; there are also several other small passages through the reefs which can be used, but these should be avoided by strangers because the ground is foul for some distance outside the entrance. Several rocks and shoals are in the sound.

(362) **Virgin Sound**, a channel 0.2 mile wide, extends between the reefs and shoals N of Prickly Pear and Eustatia Islands and

those S of Necker Island. It affords good temporary anchorage in 7 to 8 fathoms, but care must be taken to avoid the reefs on either side. The tidal currents set E and W with a velocity of about 0.5 knot.

(363) **Necker Island**, 0.7 mile N of Eustatia Island, is nearly 0.5 mile long and 107 feet high at its N part. The NE side is fairly bold and steep-to, with depths of 6 to 10 fathoms within 300 yards. The SE and W sides are foul and dangerous up to 0.5 mile offshore. Foul ground, near which is a reef that dries, extends about 0.3 mile S of Necker Island.

(364) **The Invisibles**, about 0.8 mile E of Necker Island, are three small rocky heads covered 4 to 5 feet. Depths of 5 to 8 fathoms are between the Invisibles and the reefs on the E side of Necker Island; greater depths are close off the E end. Caution is required when navigating in this area as the rocks do not always break and are hard to see.

(365) **Chart #25609.—Anegada**, the northeasternmost island of the Virgin Group, lies with **East Point**, its SE end, about 12 miles NNE of Pajaros Point. Anegada is 9 miles long, about 30 feet high, and covered with brushwood except at a few places cleared for cultivation. Numerous saltwater lagoons are in the W interior. The principal settlement is on the S side, 2.5 miles from East Point.

(366) The island is about 1.5 miles within the edge of the Virgin Bank, but the depths decrease so rapidly that sounding is of little help. The island is low, and owing to the strength and irregularity of the tidal currents in the vicinity, it is extremely dangerous to approach at night.

(367) Anegada is skirted on its N side by a narrow barrier reef which is about 0.1 mile off at **Soldier Point**, the N point, and 1.5 miles E at East Point. Thence **Horse Shoe Reef**, a most dangerous reef upon which many vessels have been lost, extends SE for nearly 8 miles. From its SE end detached coral heads and shoal ledges extend 4.5 miles SW, where they terminate in Herman Reefs, which break only with a swell or a strong breeze. Horse Shoe Reef breaks in any weather.

(368) **The White Horse** is a heap of white dead coral, 3 feet high, 2 miles W of the elbow of Horse Shoe Reef.

(369) The edge of the bank is 2.5 miles E of the elbow of Horse Shoe Reef. Here are depths of 34 fathoms close within the 100-fathom curve, and 10 fathoms about 1 mile farther in. Abreast Herman Reefs, the edge of the bank is little more than a mile distant. The S end lies 5.5 miles ENE of Pajaros Point. A detached 5-fathom patch is 0.7 mile S of the reefs.

(370) **Robert Reef**, 3.5 miles W of Herman Reefs, is a small rocky patch with $4\frac{1}{2}$ fathoms on it. Another small rocky head, with $3\frac{3}{4}$ fathoms, is 1.1 miles NNE of this reef. **Hawks Bill Bank**, about 2 miles NNW of Robert Reef, is a small rocky ledge with $2\frac{3}{4}$ to $5\frac{1}{2}$ fathoms.

(371) The reef skirting the N side of Anegada terminates about 300 yards off **West End**, but the S side of the island is foul with detached coral patches lying up to 3.5 miles offshore. A 5-fathom patch is 3.3 miles W of West End.

(372) Good temporary anchorage may be found in 5 to 6 fathoms about 1 mile off West End. During the period of rollers, October to May, however, it is advisable to anchor S of the island. The bank W of Anegada is chiefly fine sand, and in good weather vessels may anchor on it in safety, taking care to avoid the dangers.